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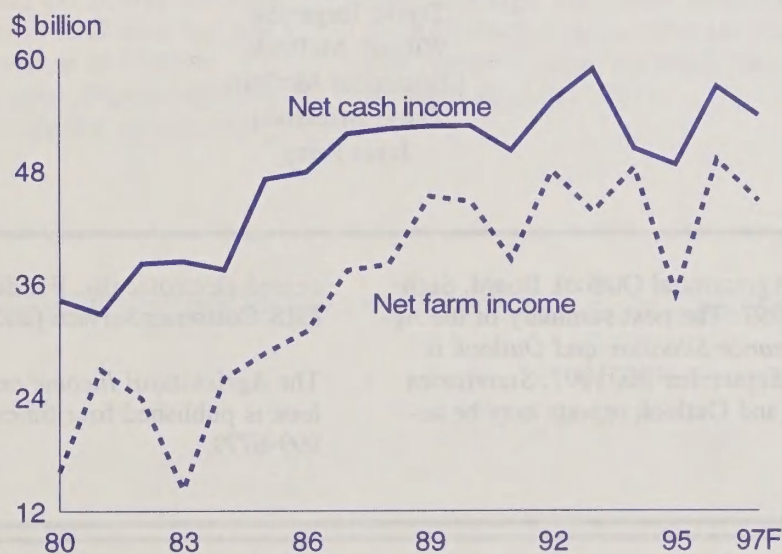Agriculture

ERS

Economic
Research
Service

AIS-65
June 1997

Agricultural Income and Finance

Situation and Outlook Report

In 1997, farm sector income forecast to be about average for the 1990's

$ billion

Net cash income

Net farm income

Agricultural Income and Finance Situation and Outlook. Rural Economy Division, Economic Research Service, U.S. Department of Agriculture, June 1997, AIS-65.

Contents

Summary

Farm Income To Remain Strong in 1997, But Decline from 1996 Record

Net farm income in 1997 is forecast to approach $45 billion, above its 1990-95 average of $43 billion, but down from the record $49 billion forecast for 1996. Lower corn receipts in 1997, due to declining prices as stocks rebuild from their mid-1990's lows, will have the largest downward influence from a year earlier. Beef cattle receipts will provide the greatest upward boost as a smaller beef herd and strong exports push up cattle prices. Livestock producers will benefit from lower feed expenses in 1997, partly because of lower corn prices. They will, however, have larger expenses for feeder animals as stronger cattle and hog markets drive up livestock prices.

Crop receipts are forecast at a record $109 billion in 1996, but will likely decline to a still healthy $106 billion in 1997. Lower expected feed grain prices due to expanding world grain supplies explain most of the decline. Propelled by increased beef cattle prices, livestock receipts in 1997 are expected to rise from the $93 billion forecast for 1996 to over $95 billion.

Although many farms that specialize in crops will likely have a year-to-year decline in their 1997 earnings, those specializing in soybeans will be an exception. Abundant production and continued strong prices will push 1997 soybean receipts to a record high. The lower incomes on crop farms will mostly come from lower crop receipts, not from higher expenses. In contrast, many livestock operations will see their 1997 incomes increase as producers benefit from higher cattle and hog prices and lower priced feed.

Total farm production expense, used to calculate net farm income, is forecast to increase less in 1997 than last year's 5-percent rise and the 3-percent average of 1990-95. Lower feed prices are the major reason. Higher prices for labor and young livestock will provide the strongest upward pressures on farm expenses.

Following an increase in 1996, commercial farms in the Northern Plains will likely have the largest percentage decline in farm income of any region. The major reason is that Northern Plains farms are expected to earn less from their wheat this year as prices dip. Lower corn receipts will also squeeze their earnings. Corn Belt farms have the best chance of not seeing a decline, following their strong increase in 1996 earnings. Though their corn earnings will decline, Corn Belt farms are diversified into commodities with expected higher returns this year, including soybeans and hogs.

Lower crop receipts are forecast to lead to lower income on all sizes of farms in 1997, with mid-sized operations—those with annual sales from $100,000 to $500,000—having the largest percentage declines. Mid-sized farms depend more on corn for income than either the largest or smallest farms and 1997 receipts are forecast to decline more for corn than any other crop. Mid-sized farms make up 13 percent of all farms and produce about 60 percent of the national corn crop.

The value of assets owned by America's farm sector is expected to exceed $1 trillion in 1996, and continue growing in 1997. The value of farm land and buildings, the largest share of the sector's assets, has grown rapidly in the 1990's. Farm real estate values are expected to rise 5.3 percent this year, after a 7-percent increase in 1995, and a projected 7.4-percent hike in 1996. Following recent trends, farm business debt is expected to grow about 3 percent this year, considerably below the increases in the sector's land, buildings, machinery, livestock, and other assets. Strong growth in asset value and modest expansion in farm debt foretell a rising net worth for the farm sector into the second half of the 1990's.

Agriculture Likely To Produce Strong 1997 Income—Though Earnings Could Dip Below the 1996 Record

Lower corn receipts, due to price declines as stocks rebuild from the lows of the mid-1990's, could be the largest negative year-to-year influence on 1997 national farm income. Beef cattle receipts could increase as a smaller beef herd and strong exports push up cattle prices, creating the largest positive year-to-year influence. Livestock producers should benefit from lower feed expenses in 1997, partly because of lower corn prices. On the other hand, they will have larger expenses for young animals to feed for later resale as stronger cattle and hog markets drive up livestock prices.

ERS forecasts 1997 farm net cash income will be close to the 1990-95 average of $53 billion, down from the $57 billion forecast for 1996. Net cash income does not consider changes in farm inventories of crops and livestock. For example, a farmer might produce a bumper corn crop in 1997 but hold it to sell in 1998 hoping that prices increase. The value of the stored corn is omitted when calculating the farmer's 1997 net cash income. In contrast, if the farmer sells corn in 1997 that was produced in 1996, that sale is included. See appendix tables 1 and 3 for more detail on how ERS calculates farm income measures and for historic farm income numbers.

Net farm income in 1997 should also be close to its 1990-95 average, $43 billion, following the potential record $49 billion forecast for 1996. One important difference in net farm and net cash income is that net farm income does include changes in farm inventories. Consider again the example of the farmer who stores the 1997 corn crop. The value of the stored corn is included in 1997 net farm income while the value of corn the farmer produced in 1996 but sold in 1997 is deducted. The net effect of these two types of inventory changes on net farm income is shown on the line labeled "inventory adjustment" in appendix tables 1 and 3. The inventory adjustment is forecast to add around $1 billion to 1997 net farm income, compared with $3 billion in 1996, explaining an important part of the forecast year-to-year decline.

Crop Receipts To Decline from 1996, But Should Remain Near Record

ERS forecasts that farmers will earn slightly less from 1997 crop sales than the record $109 billion forecast for 1996. Lower expected feed grain prices due to expanding world grain supplies explain most of the expected decline. During 1990-95, farmers earned an average $88 billion per year from crop sales, which provided 45 percent of their cash income. For details on historic and forecast crop receipts see appendix table 4.

Corn could have the largest negative year-to-year influence on 1997 farm income of any crop. Farmers were able to plant corn early this year and they put in the largest acreage since 1985, so the corn crop could be near record if nature remains generous through harvest. Before the 1996 harvest, U.S. corn stocks had dipped to just 5 percent of

annual use for feed, seed, and exports, compared with an average 17 percent before the 1990-95 harvests. The 1996 harvest, the second largest ever, rebuilt stocks to 10 percent of annual use and if 1997 corn production fulfills its potential, stocks could expand to around 14 percent of annual use. Prices tend to moderate as stocks build relative to annual use, and if they dip enough, receipts can go down, even though farmers have more commodity to sell. Following that pattern, farmers are expected to earn less from corn in 1997 than the record $22 billion forecast for 1996. Even so, farmers' 1997 earnings from corn should be well above their average annual $15 billion during 1990-95.

Following corn, wheat could have the second largest negative year-to-year influence on 1997 farm income of any crop. Farmers may produce slightly less wheat than in 1996, but it should be enough to rebuild stocks for the second year from the low levels reached before the 1996 harvest, causing wheat prices to fall well under 1996 levels. Lower production and prices should push 1997 wheat receipts lower than 1996 receipts, but they are forecast to remain above the 1990-95 annual average of $7 billion.

Soybeans will be the crop with the largest positive year-to-year influence on 1997 farm income. As with corn, early planting and large acreage could produce an abundant harvest, perhaps even a record. But in contrast to corn, the 1997 harvest is expected to be the first to start rebuilding the low stocks of the last several years, so soybean prices could decline proportionally less than corn prices. The combination of abundant production with continued strong prices could push 1997 soybean receipts well above their $12 billion 1990-95 average, possibly even to a new record.

Livestock Receipts Forecast Higher Than in 1996

Livestock receipts in 1997 should increase from the $93 billion forecast for 1996. Higher beef cattle prices—caused by reductions in the beef herd and strong export demand—will be the most important influence. During 1990-95, farmers earned an average $88 billion a year from livestock receipts, the same amount as for crops. For details on historic and forecast livestock receipts see appendix table 4.

Figure 1

ERS forecasts that in 1997. . .

Lower corn receipts will be the largest negative influence on farm income-soybean receipts will rise

$ billion

Corn receipts

Soybean receipts
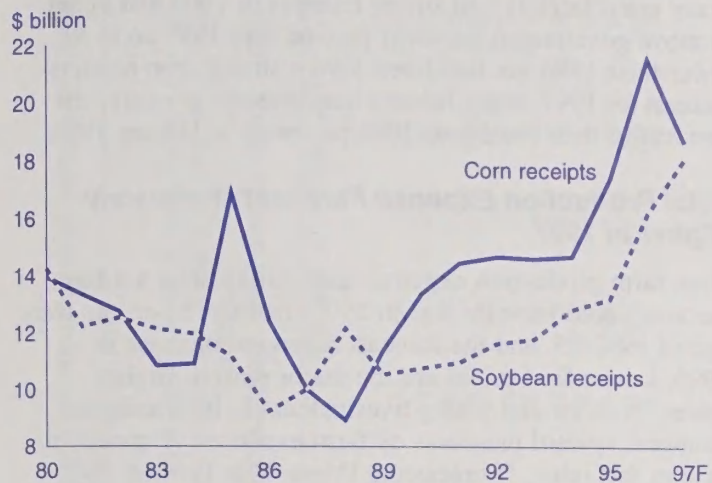
Beef cattle receipts will increase after 3 years of declines--dairy receipts will decrease

$ billion

Cattle and calf receipts

Dairy receipts
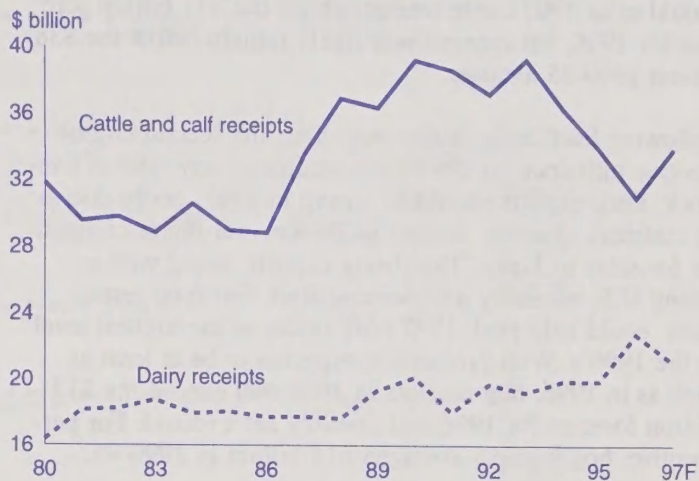
Total crop receipts will decline while total livestock receipts increase

$ billion

Crop receipts

Livestock receipts
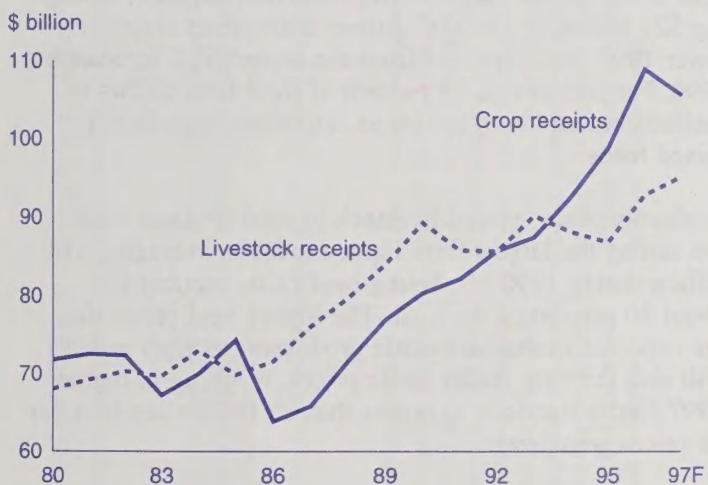
Expenses for feed will decline while expense for feeder livestock increases

$ billion

Feed expense

Livestock expense
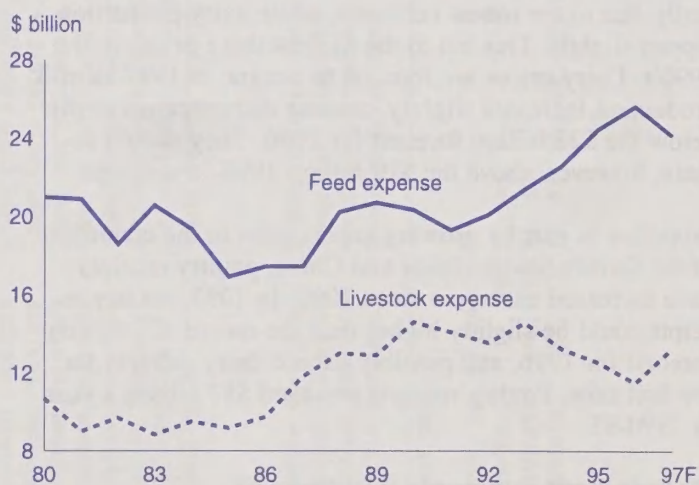
Production expense will increase less than in recent years

$ billion

Total production expense

Total cash expense
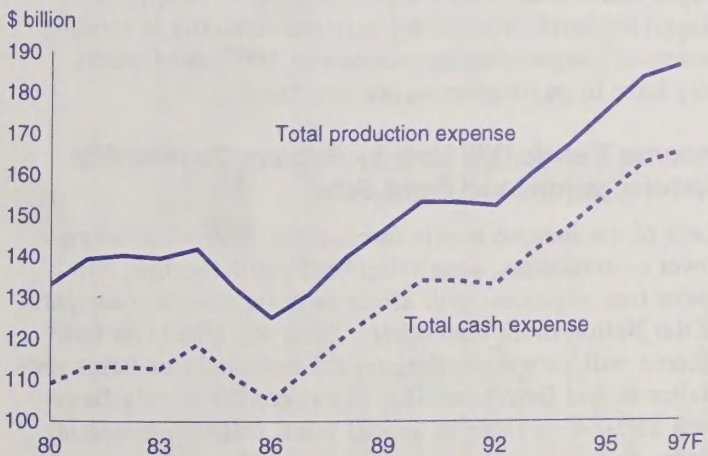
Farm sector income will be about average for the 1990's

$ billion

Net cash income

Net farm income

Economic Research Service, USDA
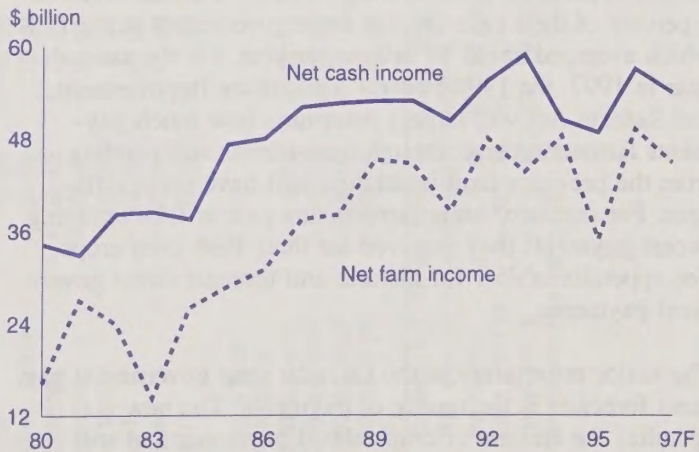
Cattle receipts declined each year from 1994 through 1996 as the large supply of cattle on farms depressed prices. In response, farmers reduced the cattle herd by more than 2 million head during 1996 and are expected to reduce it by a similar amount in 1997, which could push 1997 beef cattle prices up to levels last seen in 1994. The higher prices should raise 1997 cattle receipts above the $31 billion forecast for 1996, but receipts will likely remain below the $38 billion 1990-95 average.

Following beef cattle, hogs could have the second largest positive influence on 1997 farm income of any type of livestock. Pork exports should be strong in 1997, partly due to an outbreak of swine disease in Taiwan, our major competitor for sales to Japan. The strong exports, along with a strong U.S. economy and demand from fast food restaurants, could help push 1997 pork prices to the highest level in the 1990's. With production expected to be at least as high as in 1996, hog receipts in 1997 will exceed the $13 billion forecast for 1996 and possibly set a record. For perspective, hog receipts averaged $11 billion in 1990-95.

Dairy could have the largest negative influence on 1997 farm income of any type of livestock. Consumer demand for cheese and other dairy products was strong in 1996, partly due to the robust economy, while dairy production dipped slightly. This led to the highest dairy prices in the 1990's. Dairy prices are forecast to decline in 1997 as milk production increases slightly, causing dairy receipts to dip below the $23 billion forecast for 1996. They should remain, however, above the $19 billion 1990-95 average.

Propelled in part by growing export sales to the countries of the former Soviet Union and China, poultry receipts have increased each year since 1992. In 1997, poultry receipts could be slightly higher than the record $22 billion forecast for 1996, and possibly exceed dairy receipts for the first time. Poultry receipts averaged $17 billion a year in 1990-95.

Government Payments Will Change Little in 1997

Government payments to farmers in 1997 will be close to the $7.3 billion of 1996. During 1990-95, farmers received 5 percent of their cash income from government payments, which averaged about $9 billion per year. For the second year in 1997, the 1996 Federal Agriculture Improvement and Reform Act will largely determine how much payments farmers receive, though transactions still pending from the previous farm legislation will have some influence. For instance, some farmers this year will be repaying excess payments they received for their 1995 corn crops. See appendix table 1 for historic and forecast direct government payments.

The major uncertainty in the calendar year government payment forecasts is the timing of payments. The new act specifies the amount of crop-related payments that will be divided among participating farmers for each of the 7 fiscal years it is in force. Fiscal year 1997 started on October 1, 1996, and will end on September 30, 1997. Farmers can choose to receive the first half of each fiscal year payment in either December or January, so payments from both fiscal year 1997 and fiscal year 1998 will affect calendar year 1997 income. Early evidence suggests that many farmers chose to receive the first installment of their 1997 fiscal year payment in January. A possible explanation is that many grain farmers had strong receipts in 1996 and opted to move government payment income into 1997 so as to lower their 1996 tax liabilities. Given strong crop receipts forecast for 1997, many farmers may also opt to receive the first half of their fiscal year 1998 payments in January 1998.

Total Production Expense Forecast Moderately Higher in 1997

Total farm production expense, used to calculate net farm income, could increase less in 1997 than the 3 percent average of 1990-95, and the forecast 5 percent increase in 1996. Lower feed prices are the major reason. Higher prices for labor and young livestock could be among the strongest upward pressures on farm expenses. A special article in this issue, "Forecasting Prices That Farmers Pay for Production Inputs" discusses what influences the prices that farmers pay for feed and other production inputs.

Feed is the largest single farm production expense, averaging $21 billion in 1990-95. Lower corn prices should lower 1997 feed expenses from the record high forecast for 1996. Farmers devote 15 percent of their feed dollars to shelled corn and corn is also an important ingredient in mixed feeds.

Feeder livestock, young livestock to feed for later resale, are among the largest farm input expenses, averaging $14 billion during 1990-95. Young beef cattle account for about 80 percent of the total. The higher beef prices that are expected to increase cattle producers' receipts in 1997 will also drive up feeder cattle prices, resulting in higher 1997 feeder livestock expenses than in 1996 when beef cattle prices were lower.

Farm labor expense, averaging $15 billion per year during 1990-95, is forecast to increase for the sixth consecutive year in 1997. The increase will come largely from higher wages rather than from a higher number of people employed on farms. The strong national economy is creating increased competition for workers in 1997 and farmers may have to pay higher wages to compete.

Income Trends Will Vary by Region, Commodity Specialization, and Farm Size

Each of the income trends forecast for 1997—including lower corn receipts, improving beef cattle receipts, and lower feed expense—will affect farm income in some parts of the Nation more than others. Also, the effects on farm income will vary depending on the commodities farms specialize in and farm size. This report considers only farms with $50,000 or more in annual sales, called commercial farms, to examine income trends by region and commodity specialty. Commercial farms produce most of the Nation's crops and livestock. For example, commercial farms in the Lake States, Corn Belt, and Northern Plains produce three-

Table 1--Higher soybean receipts and lower corn receipts will be the major influences on 1997 income for many types of commercial farms 1/

Commercial farms with this characteristic	Could see these changes in their net cash income: 1997/1996	1996/1995	The largest positive influence on their 1997 income could be:	While the largest negative influence could be:	Corn	Soybeans	Wheat	Cattle	Dairy	Feed	Lvst.	Labor
	% Change (OM=or more)				During the 1990's they have accounted for these portions of production of: ------ percent (* = less than 1) ------					And these portions of farm expense for:		
Region 2/												
Northeast	- 0-10	- 0-10	lower feed expense	lower dairy receipts	2	*	1	5	19	9	3	8
Lake States	- 0-10	+ 10 OM	higher soybean receipts	lower dairy receipts	11	10	4	12	25	10	6	8
Corn Belt	none	+ 10 OM	higher soybean receipts	lower corn receipts	50	54	7	11	9	19	17	9
Northern Plains	- 10 OM	+ 10 OM	higher cattle receipts	lower wheat receipts	16	8	34	14	2	8	21	4
Appalachia	+ 0-10	+ 0-10	higher tobacco receipts	lower corn receipts	3	4	2	2	6	5	5	5
Southeast	- 0-10	- 0-10	higher cattle receipts	lower corn receipts	1	1	1	2	3	5	2	10
Delta	- 0-10	+ 0-10	higher soybean receipts	lower cotton receipts	1	7	2	1	4	6	4	3
Southern Plains	- 0-10	- 0-10	higher cattle receipts	lower cotton receipts	3	2	7	10	4	6	17	5
Mountain	- 0-10	none	higher cattle receipts	higher livestock expense	2	*	16	8	5	5	10	6
Pacific	- 0-10	- 0-10	lower feed expense	higher labor cost	1	*	12	6	20	13	7	35
Commodity specialization												
Wheat	- 10 OM	+ 10 OM	higher cattle receipts	lower wheat receipts	*	*	35	*	*	*	1	1
Corn	- 10 OM	+ 10 OM	higher soybean receipts	lower corn receipts	43	24	4	1	*	*	2	2
Other grain	- 0-10	+ 0-10	higher soybean receipts	lower corn receipts	20	23	17	2	*	2	3	3
Soybean	+ 0-10	+ 10 OM	higher soybean receipts	lower corn receipts	6	17	2	*	*	*	1	1
Tobacco	+ 10 OM	+ 10 OM	higher tobacco receipts	none in particular	*	1	1	*	*	*	2	3
Cotton	- 10 OM	- 0-10	higher soybean receipts	lower cotton receipts	1	2	1	2	*	*	3	2
Beef	+ 10 OM	- 10 OM	higher cattle receipts	higher livestock expense	4	4	12	41	*	15	55	8
Hogs	+ 10 OM	+ 10 OM	higher hog receipts	higher livestock expense	3	5	1	4	*	13	5	2
Dairy	- 0-10	+ 0-10	none in particular	lower dairy receipts	2	2	1	18	93	32	1	12
Sales class ($1000)												
$500 or over	- 0-10	+ 0-10	higher cattle receipts	higher feeder live. exp.	16	15	14	24	33	39	54	54
$250 to $499	- 0-10	+ 0-10	higher soybean receipts	lower corn receipts	21	21	19	11	15	15	15	15
$100 to $249	- 0-10	+ 0-10	higher soybean receipts	lower corn receipts	36	35	34	21	35	22	15	17
$50 to $99	- 0-10	+ 10 OM	higher cattle receipts	lower corn receipts	16	20	20	16	13	10	8	7

1/ Commercial farms have at least $50,000 in annual sales.
2/ The states in each region are:

Northeast - CT, DE, ME, MD, MA, NH, NJ, NY, PA, RI, VT
Lake States - MI, MN, WI
Appalachia - KY, NC, TN, VA, WV
Southern Plains - OK, TX
Corn Belt - IL, IN, IA, MO, OH
Southeast - AL, FL, GA, SC
Mountain - AZ, CO, ID, MT, NV, NM, UT, WY
Northern Plains - KS, NE, ND, SD
Delta - AR, LA, MS
Pacific - CA, OR, WA

fourths of the Nation's corn crop, while noncommercial farms in those regions produce under 10 percent. Also, to examine income trends by region, farm type, and farm size, this report uses trends in net cash income rather than trends in net farm income.

In Most Regions, 1997 Net Cash Income Will Decline

Northern Plains commercial farms could have the largest percentage decline in 1997 net cash income, following an increase in 1996. Northern Plains commercial farms make up 4 percent of all farms and are the Nation's premier wheat producers, accounting for a third of the crop. Lower returns from wheat are the major reason for the forecast decline; lower corn receipts will also squeeze 1997 farm income in the Northern Plains.

Corn Belt commercial farms have the best chance of not having a dip in their 1997 income, following the strong increase in their 1996 earnings. They are 7 percent of all farms and produce half of the Nation's corn, so expected lower corn prices this year will narrow their profits. However, these farms are diversified into commodities for which returns could be higher in 1997, including soybeans and hogs.

Net Cash Income To Decline on Many Crop Farms, Rise on Many Livestock Operations

ERS considers a farm to specialize in a commodity if more than 50 percent of the value of everything it produces in a year, whether sold or held for later sale, comes from that commodity. For instance, ERS would classify a farm that produced $52,000 worth of corn, of which $40,000 worth was sold, and produced and sold $48,000 worth of soybeans as a commercial corn farm because corn accounted for 52 percent of the annual value of production. Many commercial farms that specialize in crops are expected to have a year-to-year decline in their 1997 earnings, although commercial soybean farms will be an exception. The lower incomes on commercial crop farms will mostly come from lower crop receipts, not from higher expenses. In contrast to commercial crop farms, many commercial livestock operations may see their 1997 incomes increase. Livestock producers will benefit from higher cattle and hog prices. Additionally, lower corn prices, though reducing

earnings on commercial crop farms, will provide livestock producers with lower priced feed.

Commercial wheat farms could have one of the highest percentage reductions in 1997 net cash income, following an increase in 1996. Lower wheat receipts will be the most important reason as these farms are very dependent on wheat for income. In 1995, the latest year for which ERS has survey data, wheat provided 50 percent of their cash income. Though just 1 percent of all farms, commercial wheat farms produce 35 percent of the Nation's wheat.

Commercial corn farms could also could earn less net cash income in 1997 following strong 1996 earnings, but the drop should not be as precipitous as on commercial wheat farms. That's partly because commercial corn farms are not quite as dependent on their main crop. In 1995 corn provided 40 percent of their cash income, 10 percent less than the contribution of wheat to income on commercial wheat farms. Strong soybean prices will also keep income from dropping quite as much on commercial corn farms. Soybeans provided 20 percent of 1995 cash income on commercial corn farms.

Commercial beef farms could have among the largest percentage increases in income, following weak 1996 earnings. Higher beef receipts will provide most of the increase, although lower feed expense will also be important. Higher prices for feeder cattle will erase part of the gain from higher cattle prices and lower feed prices. Commercial beef farms are 5 percent of all farms and produce 40 percent of all cattle. They are highly specialized: In 1995, cattle sales provided 70 percent of their cash income.

Mid-Sized Farms Could Have the Largest Income Declines

Lower crop receipts could lead to lower net cash income on all sizes of farms in 1997, with mid-sized operations—those with annual sales from $100,000 to $500,000—having the largest percentage declines. They depend more on corn for income than either the largest or smallest farms and 1997 corn receipts are forecast to decline more than receipts of any other crop. Mid-sized farms are 13 percent of all farms and produce about 60 percent of the national corn crop.

Farm Assets, Debt, and Equity Continue Upward Through 1997

The value of assets owned by America's farm sector is expected to exceed $1 trillion in 1996, and continue growing in 1997. The value of farm land and buildings, the largest share of the sector's assets, has grown rapidly in the 1990's. Farm real estate values increased 7 percent during 1995, and are expected to grow 7.4 percent in 1996 and by 5.3 percent in 1997. Following recent trends, farm business debt is expected to grow about 3 percent this year, considerably slower than increases in the sector's land, buildings, machinery, livestock, and other assets. Strong growth in asset values and modest expansion in farm debt foretell a rising net worth for the farm sector into the second half of the 1990's.

The total value of the farm sector's assets likely reached $1 trillion in 1996, up 6.2 percent from 1995, and is expected to grow another 4.5 percent by the end of 1997. During the 1990's, the value of farm assets has grown nearly 4 percent per year. The value of assets held by the farming sector represents a large amount of economic wealth. For perspective, in 1996 those assets exceeded those of the Nation's largest three banks and nearly equaled the combined value of the five non-banking corporations with the greatest asset holdings.

Farm Real Estate Values Continue Rising

Continued strong farm income in 1997, although down slightly from 1996, provides the foundation for continued growth in farm real estate values. Farm real estate values are expected to increase 5.3 percent in 1997, slightly less than the projected increase of 7.4 percent in 1996. During 1991-95, farm real estate rose an average 5 percent per year. Long-term expectations for reasonably robust—although variable—farm income, an upbeat long-term outlook for exports, and stable interest rates are key factors supporting strong demand for farmland, machinery and equipment, and other farm assets.

Continued demand for agricultural land along the fringes of urbanized areas and demand for rural land for recreational purposes are also contributing to the growth in real estate values, especially in the Northeast and in some Western States. Nonreal estate assets are expected to increase about $3.4 billion (1.5 percent) in 1997. The value of machinery and equipment, crops stored, purchased inputs, and financial assets are all expected to rise slightly; offset by livestock and poultry inventories, which are expected to decline some.

Farm Debt Expected To Continue Rising in 1997

Farm debt is projected to rise 3 to 4 percent in 1997, following a 3.7-percent increase in 1996. Confidence in the long-term outlook for the sector is contributing to appreciating land values and continuing strong demand for farm mortgages provided by the Farm Credit System, life insur-

ance companies, and banks. Slightly lower net cash income and higher debt will raise farmer use of debt repayment capacity from 51 percent in 1996 to 55 percent in 1997.

Total farm business debt increased $5.5 billion in 1996. This 3.7-percent rise is the largest annual increase in outstanding farm debt since 1981. Even though a slightly smaller increase is anticipated in 1997, farm business debt should approach $162 billion by year-end. This will represent the highest debt reported since 1985, bringing it within 17 percent of the 1984 peak of $193.8 billion.

The farm business debt results are ERS's first published estimates based on year-end loan balances reported by the Farm Credit Funding Corporation, Farm Service Agency, American Council of Life Insurance, and obtained from commercial banks' annual call reports filed with the Federal Reserve System. These data provide the first insight into changes in the sector's debt-to-asset ratio, use of repayment capacity, and other financial performance measures.

The recent growth rates in farm debt are higher than the trend of modest growth in outstanding loan balances that began in 1992. Farmers and lenders, despite caution over potential volatility in crop and livestock enterprises under unfavorable spring planting conditions and less restrictive government programs, appear to have confidence in the long-run profitability of the sector. While the increase in borrowing is above recent trends, it is relatively modest when compared with the concurrent rise expected for the value of farm business assets.

Farm Service Agency (FSA, formerly the Farmers Home Administration) direct loans declined $628 million in 1996, a drop of more than 6 percent, as the agency continued to address its problem loan portfolio. FSA direct loan debt is expected to decline another 7 percent in 1997. When FSA direct loans ending activity is excluded from the analysis, the farm business debt owed to other lenders has increased at an annual rate of 4 percent since 1992. As FSA direct lending continues to decline, less profitable farm operations may experience greater difficulty obtaining adequate financing. Despite the tight credit market facing

higher risk loan applicants, lenders continue to aggressively pursue qualified borrowers, and competition for quality loans will continue to intensify in 1997.

Banks' Market Share Stabilizes

Commercial bank farm loan balances have risen annually since 1987, but the rate of growth has slowed since 1994. During 1996, debt to banks rose over $1.8 billion, a gain of 3 percent. This was substantially less than the gains of 5-6 percent that banks typically recorded since 1988. Because bank debt rose more slowly than that of other lenders, banks experienced a slight loss of market share last year for the first time since 1981. Bank market share is expected to remain above 39 percent in 1997, despite a further slight decline.

Commercial banks surpassed the Farm Credit System as the principal source of agricultural loan funds in 1987. Using their ability to serve as both real estate and nonreal estate lenders, commercial banks increased their share of all outstanding farm loans from 22 percent in 1982 to almost 40 percent by the end of 1995. Banks have benefited from the Farm Service Agency's increasing focus on guaranteed loans, which have increased from less than $2 billion at the end of 1986 to over $6 billion by the end of 1996.

Bank nonreal estate lending has faced continuing pressure from the Farm Credit System and the emergence of point-of-sale financing by captive finance companies of machinery manufacturers and input suppliers. Growth of bank nonreal estate debt has slowed from more than 6 percent in 1993 to less than 2 percent in 1996. With strong competition in this market, growth of bank nonreal estate debt is expected to remain below 2 percent in 1997.

Farm operators typically use commodity receipts to pay down bank loans after harvest each year. Loan paydown rates on bank nonreal estate loans have run about 4 percent during the 1990's, but were less than 3 percent in the fourth quarter of 1996. Since banks are not reporting widespread increases of defaults, extensions, and renewals, this may represent a shifting of seasonal repayment patterns into the first quarter of 1997. Given the severe winter faced by Northern Plains producers, some highly leveraged operations may experience difficulty in meeting payments.

Farm Credit System Loans Surge

The Farm Credit System (FCS), after several years of favorable net interest margins and improved System profitability, is beginning to regain market share lost during the 1980's. FCS reported a total farm loan increase of almost $2.2 billion in 1996, a gain of almost 6 percent. FCS debt is anticipated to rise an additional 5 percent in 1997.

Rapidly rising nonreal estate loan volumes accounted for much of the increase in FCS loan volume prior to 1996. Nonreal estate loans rose 6 percent in 1994, 12 percent in 1995, 11 percent in 1996, and are projected to rise another 9 percent in 1997. FCS mortgage loans had stabilized slightly below $25 billion during the 1990's. FCS real estate loans rose 3.5 percent in 1996, the largest annual increase since 1984. System mortgage lending is expected to rise another 3 percent in 1997.

FCS' s share of total debt declined annually from 1982 through 1994. While FCS experienced difficulty in increasing loan balances and in regaining market share, it continued to report improved overall financial performance. Improved borrower financial condition and falling interest rates have translated into improved FCS performance.

FCS's share of nonreal estate loans, which fell from 25 percent in the early 1980's to less than 15 percent in 1988, is expected to recover to 19 percent by the end of 1997. FCS's share of farm mortgage loans had fallen continuously from almost 44 percent in 1984 until its recent rebound, and it is projected at about 31 percent by the end of 1997. Despite these recent increases, total FCS debt at the end of 1997 is still expected to be 36 percent below its 1984 peak.

Farmers Use of Repayment Capacity To Rise in 1997

Farmers are expected to use their available credit lines more fully in 1997. Lenders generally require that no more than 80 percent of a loan applicant's available income be used for repayment of principal and interest on loans. For farm operators, income available for debt service (measured as net cash income plus interest) can be used to determine the maximum loan payment the farmer could make. Using current bank interest rates and a 7-year repayment period, maximum feasible debt conceptually measures the line of credit that could be available to farmers.

Farm debt repayment capacity use (actual debt expressed as a percentage of maximum feasible debt) effectively measures the extent to which farmers are using their available lines of credit. This ratio indicates that, in 1997, farmers are expected to use almost 55 of the debt that could be supported by their current incomes. Use of debt repayment capacity rose from 45 percent in 1993 to 58 percent in 1995. Despite the 1996 rise in farm business debt, high net cash income levels and lower interest rates led to a drop in use of debt repayment capacity use to 51 percent.

More than a Decade of Increasing Farm Sector Equity

Significant gains in the nominal value of farm equity are expected in 1997 as farm asset values continue to rise more rapidly than debt. In today's dollars, $1 trillion in assets minus $158 billion in debt yields a sector net worth of nearly $927 billion. Farm sector equity by the end of calendar year 1997 is expected to be almost $100 billion more than in 1995, and over $300 billion greater than 1985.

The long term farm equity comparison is a little different if the numbers are adjusted for inflation. Dividing the dollar value recorded for each year by the 1992 GDP price deflator, an index of inflation, yields an estimate of "real" farm equity in constant 1992 dollars. Real farm equity in 1997 is forecast to be $835.4 billion. In 1986, farm equity, had an inflation-adjusted value of $705 billion compared

Table 2--Farm debt, December 31, selected years, 1984-97F

Lender	1984	1988	1992	1995	1996F	1997F
	--Million dollars----------------------------------				--Billion dollars--	
Real estate	106,697	77,833	75,421	79,287	82	84
Farm Credit System	46,596	28,445	25,408	24,851	26	27
Farm Service Agency 1/	9,523	8,980	6,394	5,055	5	4
Life insurance companies	11,891	9,039	8,765	9,092	9	10
Commercial banks	9,626	14,434	18,757	22,277	23	25
CCC storage facility	623	21	2	*	*	*
Individuals & others	28,438	16,914	16,095	18,012	18	19
Nonreal estate	87,091	61,734	63,613	71,482	74	77
Commercial banks	37,619	28,309	32,912	37,748	38	39
Farm Credit System	18,092	8,766	10,346	12,472	14	15
Farm Service Agency 1/	13,740	12,899	7,143	5,092	5	5
Individuals & others	17,640	11,760	13,230	16,170	17	19
Total debt	193,788	139,567	139,052	150,769	156	162
Farm Credit System	64,688	37,211	35,753	37,324	40	41
Farm Service Agency 1/	23,263	21,879	13,538	10,147	10	9
Commercial banks	47,245	42,742	51,669	60,025	62	64
Life insurance companies	11,891	9,039	8,765	9,092	9	10
Individuals & others	46,701	28,694	29,327	34,182	36	38

1/Formerly Farmers Home Administration.
Farm business debt outstanding as of December 31.* = Less than $500,000.
F = Forecast.

Table 3--Banks' share of farm business debt

Lender	1984	1988	1992	1995	1996F	1997F
	Percent					
Real estate	100.0	100.0	100.0	100.0	100.0	100.0
Farm Credit System	43.7	36.5	33.7	31.3	31.5	31.5
Farm Service Agency	8.9	11.5	8.5	6.4	5.7	5.1
Life insurance companies	11.1	11.6	11.6	11.5	11.6	11.8
Commercial banks	9.0	18.5	24.9	28.1	28.6	29.1
Individuals & others	27.3	21.7	21.3	22.7	22.6	22.5
Nonreal estate	100.0	100.0	100.0	100.0	100.0	100.0
Commercial banks	43.2	45.9	51.7	52.8	51.6	50.5
Farm Credit System	20.8	14.2	16.3	17.4	18.5	19.3
Farm Service Agency	15.8	20.9	11.2	7.1	6.5	5.9
Individuals & others	20.3	19.0	20.8	22.6	23.4	24.3
Total debt	100.0	100.0	100.0	100.0	100.0	100.0
Farm Credit System	33.4	26.7	25.7	24.8	25.3	25.7
Farm Service Agency	12.0	15.7	9.7	6.7	6.1	5.5
Life insurance companies	6.1	6.5	6.3	6.0	6.1	6.1
Commercial banks	24.4	30.6	37.2	39.8	39.6	39.4
Individuals & others	24.1	20.5	21.1	22.7	23.0	23.4

Market shares of farm business debt outstanding as of December 31.

Figure 2
Farm sector assets, debt and equity
Equity increasing since 1986
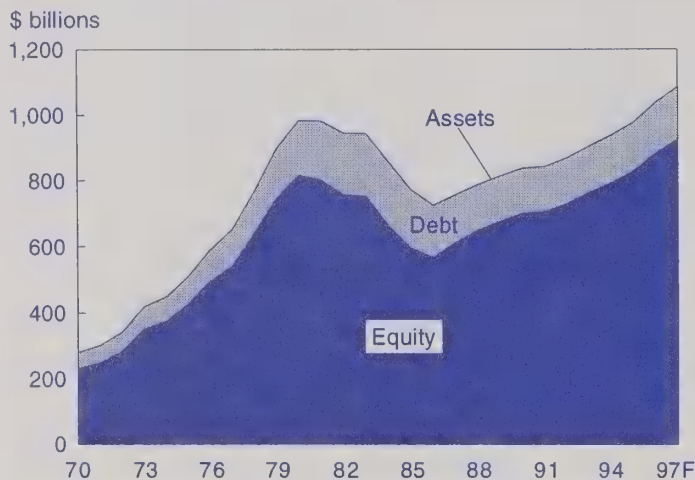
$ billions

with an estimated peak of almost $1.4 trillion in 1980. Consequently, farm sector wealth in 1997 is still $516 billion below the inflation-adjusted value of farm equity in 1980.

Debt to Asset Ratio Continues Downward Trend

Indicators used to measure the solvency of the farm sector remain favorable for 1996 and 1997. The debt-to-asset ratio indicates the relative dependence of farm businesses on debt and their ability to use additional credit without impairing their risk-bearing ability. The lower the debt-to-asset ratio, the greater the overall financial solvency of the farm sector. The debt-to-asset ratio is forecast to be 14.6 percent in 1997, compared with 15.0 percent expected in 1996. The share of debt to total asset value has been declining steadily in the 1990's, from 16.5 percent in 1991 to 15.4 percent in 1995. By the 1990's, the level of this indicator of solvency had changed markedly from 1985, when the debt-to-asset ratio stood at 23 percent. The debt-to-equity ratio is forecast to be 17.0 percent in 1997, compared with 17.7 expected in 1996, and down from 18.23 in 1995.

Profitability of Farm Sector Investments Rising

Rates of return on farm assets and equity, indicators of the profitability of farm sector investments, likely rose in 1996. Total returns on farm business assets (including capital gains) are estimated at 5.6 percent in 1996 (with 3.0 percent growth in current income and 1.7 percent growth in capital gains). However, the lower farm income forecast, combined with a continued rise in farm sector asset and equity values, suggest slightly lower rates of return on farm assets and equity in 1997. Total returns on farm business assets are forecast at 5.0 percent in 1997, reflecting both the lower expected returns to farm assets and somewhat slower appreciation in farm asset values.

Key Financial Ratios Improve

Net cash flow provides an indication of the total resources available to farm businesses for investment in the sector, and to meet current debt obligations. Net cash flow expands upon net cash income by accounting for both internal and external sources of funds. The ratio of net cash flow to debt fell from 3.0 in 1995 to 2.5 in 1996. However, debt to net cash flow is forecast to rise to 2.8 in 1997. During the 1990's, debt to net cash flow has fluctuated within a reasonable narrow range of 2.3 to 3.0. From 1980 to 1985 the ratio ranged from 4.4 to 5.9.

The debt / returns to farm assets ratio rose to 9.9 in 1995 as farm debt rose and returns to operators fell sharply. However, the ratio fell to 3.9 in 1996 and is forecast to rise to 4.6 in 1997. This means there is $4.60 of farm debt per $1 of returns in 1997, compared to $3.90 in 1996. Conversely, there are fewer dollars of returns to meet farm debt obligations in 1997 than in 1996. On average, the profitability of farm sector investments (including capital gains) is expected to be slightly lower in 1997 than in 1996.

Figure 3
Debt to net cash flow
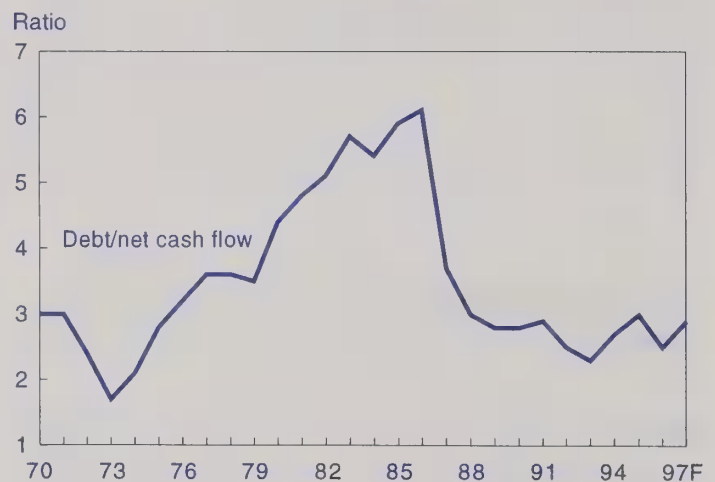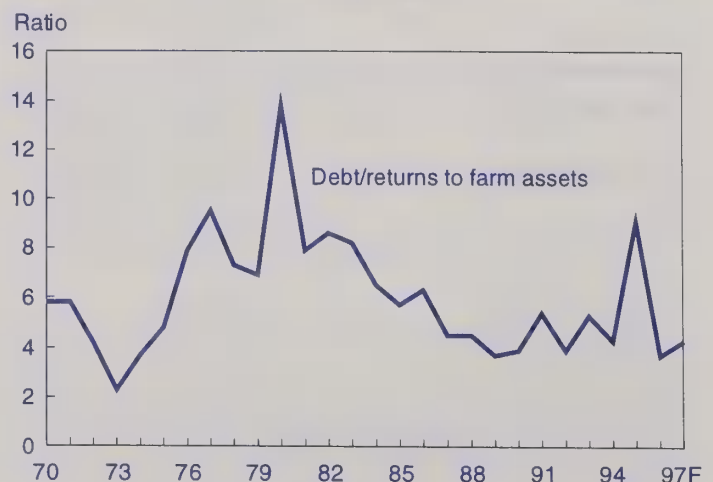*Debt to net cash flow reasonably stable in 1990's*

Ratio

Figure 4
Debt to returns-to-farm assets
Returns strong compared with debt in 1996 and 1997

Ratio

Farm Operator Household Income Is on Par with the Average U.S. Household

For several years, we have been reported that farm operator household income is on par with that of the average U.S. household. Household income is cash income from all sources available to the household before taxes. Using data from the 1995 Farm Costs and Returns Survey (FCRS), we estimated that the average farm operator household income was $44,392 compared with $44,938 for the average U.S. household, as estimated by the Current Population Survey (CPS). While the average operator household receives income comparable with the average U.S. household, the distribution of income across operator households is more uneven than that for all U.S. households: there are more people in the low (and high) household income category.

According to data from the FCRS, about 68 percent of operator households have income below the U.S. average, compared with just over 60 percent of all U.S. households. In large part, this is due to the nature of farming, where in any given year a household may experience financial losses from the farming enterprise. Most U.S. households depend on wage earners that do not have these periodic losses. It is a reflection of the health of the rural economy that farm families can now earn off-farm income to mediate these farm loses. Even on the largest farms, the average operator household received 16 percent of its total household income from off-farm sources. In the past, when the rural economy did not provide many non-farm employment opportunities, farm families had substandard incomes. Even now, in areas where non-farm employment opportunities are few, operator household income is lower, and households are more dependent on the earnings of the farm.

Median income also compares income of farm operator households to that of all U.S. households. Median income for all U.S. households was $34,076, compared with $30,698 for farm operator households. We compared farm operator households with non-metro households (although we know that some operator households are in metro counties). Median income for all non-metro households is $27,776. Using State level estimates of non-metro median income we found that 43 percent of farm operator households have income below this median measure. Fewer then 50 percent of operator households by category have income below the non-metro median mark, indicating that on the whole farm operator households are slightly better off financially than other non-metro U.S. households.

Farm operators run businesses, and could more appropriately be compared with a group of households that also have self-employment income. Recent information from the Survey of Consumer Finances shows that the median income for families with self-employed heads fell 2.9 percent to approximately $39,000 in 1995 after holding steady between 1989-92. It has long been recognized that a large proportion of farms are very small businesses, and this may contribute to the lower median income of farm operator households when compared with other self-employed households. In earlier research using the CPS, Carlin and Butler (AIS, December 1991) confirmed that when farm households were compared to U.S. self-employed households the difference in median income was not significant. The research also confirmed that non-self-employment income was an important part of total household income for all U.S. self-employed households, not just for farmers.

Table 4--Farm operator household income, by selected characteristics, 1995

Item	Farm operator households		Average operator household income		Share from off-farm sources[1]		Average operator household income as percent of U.S. avg. income	Percent with income below U.S. average hhold income	Median operator household income	Percent with income below U.S. non-metro median income[4]
	Number	RSE[3]	Dollars	RSE[3]	Percent	RSE[3]	Percent	Percent	Dollars	Percent
All farm households	2,036,810	2.5	44,392	2.8	89	1.4	99	68	30,698	43
Operator's age:										
Less than 35 years	168,825	9.6	32,506	6.7	93	6.0	72	74	28,600	51
35 to 44 years	407,345	5.2	47,266	6.2	89	3.2	105	62	35,844	37
45 to 54 years	476,807	4.9	51,953	4.2	92	2.3	116	58	39,914	30
55 to 64 years	469,052	5.2	50,421	7.0	88	2.9	112	67	31,314	44
65 years or older	514,780	4.7	33,518	5.5	87	3.7	75	80	21,425	58
Operator's education:										
Less than high school	425,612	5.6	30,173	10.6	94	2.9	67	84	19,031	63
High school	819,087	4.0	41,479	4.2	87	2.4	92	70	30,400	44
Some college	443,374	5.4	48,726	4.8	86	3.6	108	50	36,685	29
College	348,736	5.4	63,075	5.2	93	2.3	140	51	44,294	28
Operator's occupation:										
Farming	903,820	2.5	40,342	4.0	65	3.3	90	72	25,332	51
Other occupation	797,718	4.7	53,425	4.4	109	1.1	119	60	39,442	29
Retired	335,272	7.0	33,815	7.3	95	5.0	75	77	23,608	58
Type of farm:										
Cash grains	383,554	3.7	48,922	5.9	74	3.1	109	64	35,927	39
Other crops	468,177	5.1	53,476	5.6	79	3.3	119	64	33,811	39
Beef, hogs, or sheep	947,190	3.9	37,605	3.9	108	2.0	84	71	28,600	47
Dairy	121,506	4.8	47,707	15.6	48	18.8	106	65	27,241	42
Other livestock	116,383	14.5	44,695	15.2	109	4.7	99	72	30,201	47
Sales class of farm:										
Less than $50,000	1,514,542	3.3	39,814	3.6	108	1.3	89	71	29,700	45
$50,000 or more	522,268	2.1	57,667	4.5	51	4.7	128	58	37,200	38
$50,000 - $99,999	192,476	4.9	33,367	6.6	88	4.5	74	69	27,507	47
$100,000 - $249,999	215,375	3.2	47,093	9.3	62	7.3	105	59	36,364	37
$250,000 - $499,999	71,674	4.3	72,307	8.4	41	12.5	161	40	60,760	25
$500,000 or more	42,743	4.2	195,825	7.5	16	10.5	436	28	110,093	21
Farm organization:										
Individual	1,880,516	2.7	42,354	3.0	93	1.4	94	69	30,361	44
Partnership	100,226	7.1	64,387	9.7	68	7.2	143	59	37,515	35
Family corporation	56,067	9.9	76,978	10.4	50	11.8	171	50	46,522	35
Major farming region:										
Northeast	135,899	7.0	44,583	9.0	91	6.4	99	69	30,146	31
Lake States	220,451	7.0	41,427	6.9	87	3.3	92	65	32,156	46
Corn Belt	412,522	5.5	46,049	5.7	85	2.6	102	66	35,243	39
Northern Plains	180,989	6.5	39,148	7.9	74	6.6	87	71	28,600	45
Appalachian	295,109	6.8	40,416	8.7	94	2.6	90	71	28,443	46
Southeast	150,529	7.8	48,724	10.4	97	2.8	108	71	28,103	48
Delta	109,622	8.8	37,532	9.1	102	4.2	84	75	21,734	50
Southern Plains	270,893	8.4	42,853	7.8	100	4.3	95	68	29,054	45
Mountain	111,797	7.5	42,133	10.1	89	4.9	94	67	31,803	45
Pacific	148,997	12.3	63,421	13.7	80	8.2	141	59	36,522	43

1/ Income from off-farm sources can be more than 100 percent of total household income if farm income is negative.

2/ Mean household income divided by U.S. mean household income ($44,938).

3/ The relative standard error (RSE) provides the means of evaluating the survey results. A smaller RSE indicates greater reliability of the estimate.

4/ Farm operator household income was compared to the non-metro median income by state.

Source: Calculated by ERS using data from the 1995 Farm Costs and Returns Survey (FCRS).

Economic Growth To Moderate for Rest of 1997

Farm production expenses, reflecting modest economy-wide producer price inflation, should have the smallest increase in several years. A strong 1997 rural economy will support good farm household off-farm income growth and offset the impact of 1997's lower farm income on farm household finances.

U.S. gross domestic product (GDP) grew at a robust annual rate of 5.8 percent in the first quarter of 1997. The only major component of GDP that fell was net exports as the real trade deficit widened by almost $18 billion. Exports rose at an 11-percent annual rate, $18 billion, while imports rose 23 percent, or $36 billion. A risk to continued economic growth prospects evaporated as crude oil prices, which had peaked at over $23 per barrel in late 1996, fell below $20 per barrel this spring.

Domestic labor markets have shown remarkable strength. Over 2 million jobs have been added in the last year. More than half the jobs added in 1996 were in categories with above average compensation. The wage increases in 1996 beat inflation for the first time since the recovery began in 1991. May's 4.8-percent unemployment rate is as low as it has been in almost 20 years.

Despite robust GDP growth and a tightening labor market, inflation has been modest. The producer price index fell 5 months in a row for the first time in over 40 years. May's consumer prices were only 2.2 percent higher than a year ago. GDP deflator inflation was 2.2 percent in the first quarter of 1997, the same as a year earlier.

Reflecting the recent strength of the economy, capacity utilization has been rising. High capacity utilization and tight labor markets raise the odds of higher inflation in 1998. As a preemptive strike against higher 1998 inflation, the Federal Reserve Board (Fed) raised the Fed funds rate, the rate at which banks lend to each other to cover reserve requirements, by 25 basis points in March. Additional increases may follow later this year.

The prospects for the rest of 1997 are for moderating growth. The relatively high real domestic interest rates compared to Germany and Japan will keep the dollar strong. The high-valued dollar will slow export growth. The inventory buildup of the first quarter will mean slower inventory building for the rest of 1997. High interest rates will constrain spending growth on consumer durables, housing, and business investment.

The slowing output picture will slow employment growth. Further, shortages of certain types of labor are likely to intensify even as output growth moderates. As a result, real wages will rise more than in 1996 as firms become more aggressive in bidding workers away from other firms. The real wage boosts will increase labor force growth faster than employment growth, raising the unemployment rate

by the end of the year. The wage growth will support solid after-tax income growth, which will in turn support strong consumer spending growth in services and nondurable goods. GDP growth is expected to average 3.5 percent in 1997, with growth averaging about 2 percent at an annualized rate for the last three quarters.

The 1997 inflation picture will continue to be good, reflecting the moderating growth of the domestic economy, expected crude oil prices at or below $20 per barrel, declines or modest increases in other raw material prices, and the strong dollar restraining price increases in internationally traded goods. Producer prices should rise about 1.5 percent for the year.

Personal Income Offsets Strong Dollar Impact on Farm Households

The tight labor market situation is a double-edged sword for farm families. On one hand, the rural labor market will see higher real wages and higher employment than in 1996. Rural manufacturing employment, supported by good, although moderating, export growth should rise. The expected rise in real manufacturing wages and employment will be especially beneficial to rural areas as the share of manufacturing in the rural economy is higher than in the urban economy. So off-farm employment and wage prospects should generally be good as rural wages, hours, and jobs are higher than in 1997. But, the farm producer will have to pay higher wages directly and indirectly through higher prices for wage-intensive goods and services.

Without these price and wage increases, farm expenses would be down relative to 1996. Most farm loans are negotiated early in the year and most of the effective interest rate increases will take place when few farm loans are made. So, interest expenses will be flat compared to 1996. Delayed impacts from high crude oil prices in late 1996 and early 1997 resulted in higher prices for manufactured farm inputs such as fuel. In addition, some increases in fuel and fertilizer use are anticipated. Manufactured input expenses are expected to rise 4 percent. The wage/labor cost-sensitive "Other operating expenses" will rise over 3 percent. Still, total expenses will be up less than 2 percent for 1997.

Mirroring many other export industries, U.S. farm export value and volume will be down in 1997. But, most other exporting sectors will not see the sharp decline in domestic prices that food and feed have already seen in 1997. The

strengthening of the dollar, by further raising the effective price of food and feed crops to export customers, has added to an increased world supply. Even with a stable dollar, the relatively high prices of food and feed crops in past years would have stimulated additional world production. The strengthening of the dollar just added to the world price rise, increasing foreign production more than without the strong dollar. With lower product demand, the domestic producer price of food and feed crops falls in 1997 relative to 1996.

Good growth in personal disposable income will support livestock and speciality crop prices. These increases will

be enough to offset lower crop receipts. The net result will be cash receipts slightly below those of 1996. Higher input expenses and lower receipts make farm income, although good by historical standards, lower than in 1996.

However, the overall financial picture for farm families is improved. Off-farm income prospects are better than in 1996 from more jobs, more hours, and higher wages for farm family members off the farm. Farm asset values should be supported by the good off-farm income prospects and farm interest rates essentially unchanged from 1996.

Table 5--Key Farm Economy Related Macroeconomic Variables

	1996:2	1996:3	1996:4	1997:1	1997 f
Personal Disposable Income percent change annualized	1.4	4.9	2.6	4.2	3.6
Civilian Unemployment Rate percentage of labor force unemployed	5.4	5.3	5.3	5.3	5.2
Exchange Rate Federal Reserve trade weighted 72=100	88.0	87.1	87.0	93.7	95.9
Treasury Bond Average percentage yield on 10-year bond	6.7	6.8	6.3	6.6	6.8
Crude Oil Price Dollars per barrel refiners' acquisition cost imported	20.1	20.7	23.1	21.6	20.0

Notes: Disposable Income measured in 1992 chain-weighted dollars.
Historical income data from Bureau of Economic Analysis.
Unemployment Rate history from Bureau of Labor Statistics.
Exchange Rate and Treasury Bond history are Federal Reserve Board data series
Crude Oil Price Is Imported oil refiner's acquisition cost from Energy Information Administration.

Incorporating Marketing Costs and Returns into USDA Crop Production Accounts

by
William McBride

Abstract: Marketing costs (storage, hauling, interest, and fees) and returns (marketing price less harvest price) are incorporated into USDA commodity accounts for corn during each year of 1991-95. Average net returns to corn marketing are positive during the 5 years suggesting that their exclusion is a contributing factor to the persistent negative returns observed in traditional USDA accounts. Both cash and residual returns to management and risk increase when marketing costs and returns are incorporated into USDA accounts, but their variability is also higher. With market forces becoming more important in determining crop enterprise returns, the addition of marketing costs and returns to traditional USDA estimates would likely provide an enhanced measure of aggregate crop enterprise returns and risks.

Keywords: Production costs and returns, marketing costs and returns, corn production cost

USDA has produced enterprise cost and return accounts for major field crops since the early 1970's. These accounts include the value of crop production in each year, along with the total economic costs of production. The difference between the gross value of production and total economic costs is defined as residual returns to management and risk. Returns to management are expected to be positive. Because of the variability in weather and crop prices, returns to risk in any given year may be positive or negative, but should average zero over time. Therefore, combined returns to production management and risk are expected to be positive on average, although the level is unknown.

Returns to production management and risk shown in the USDA accounts for several commodities have been consistently negative during recent years. For example, residual returns to management and risk for corn production have not been positive since 1980 (USDA, ERS, unpublished time series data). The reason most often cited for consistently negative returns is the impact of government programs. Because direct government payments are excluded from the traditional USDA account, the estimated gross value of production is less than what farmers actually receive for being engaged in the enterprise. In recent years USDA has developed commodity accounts that include the direct effects of government program participation, beginning with rice in 1988 (Salassi et al.), grain sorghum in 1990 (Brooks), and continuing with corn in 1991 (McBride).

Another reason cited for the consistently negative returns is the exclusion of marketing costs and returns. USDA accounts include only costs associated with crop production and end at the point when the commodity is hauled from the field to storage or directly to market. Production is then valued at the harvest period price. However, farmers often delay sales and store grain with the expectation that the price in later months will exceed the harvest period price plus any costs associated with carrying the crop inventory.

This report develops how marketing costs can be incorporated into the USDA crop commodity accounts and illustrates the impacts on the costs and returns for corn. The existence of positive returns to marketing corn would help to explain why residual returns to production management and risk in traditional USDA accounts have been consistently negative.[1] Moreover, the incorporation of marketing costs and returns with USDA production costs and government program effects should give a more complete portrayal of income and expenses associated with the corn enterprise.

Estimating Marketing Costs and Returns For Corn

Marketing costs and returns are incorporated into the annual USDA account for U.S. corn production [2], including the direct effects of government program participation, during 1991-1995. Marketing costs are estimated on a per planted acre basis to fit into the framework of the account. Both cash and economic costs of the marketing activity are considered. Cash costs are short-term "out-of-pocket" expenses paid by farmers. For the marketing activity, these include the costs of storage, hauling, and marketing. Eco-

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[1] This is not to say that government program and marketing effects are the only reasons for the persistent negative returns. Accounting methods and measurement procedures also affects the cost and return estimates. For example, opportunity costs are used to value capital, land, and unpaid labor. Because of various farm financial arrangements and the unique nature of many farm production inputs, opportunity cost estimates may tend to overstate the cost of using these resources in agricultural production.

[2] Not all of U.S. corn production is sold at market. Much of the annual crop is used on-farm for livestock feed. An assumption of this analysis is that, had it been sold, corn fed to livestock would have been marketed in the same pattern as all other corn.

nomic costs are long-term "opportunity costs" of resources used during marketing. Included are an interest charge for stored grain and the additional operating capital associated with the marketing activity.

The producer usually bears the cost of grain storage from harvest until the commodity changes ownership, regardless of where the grain is stored. To facilitate the computation of grain storage costs, the corn harvesting period is assumed to include September, October, and November, while the marketing period extends from September to August. Table A-1 illustrates how corn storage costs are computed for the 1995 marketing year. In September 1995, 16 percent of the corn crop is harvested while 8.1 percent is sold, leaving 7.9 percent in storage. In October, 63 percent is harvested and 17.1 percent is sold. Thus the total crop stored during October is the 45.9 percent harvested and unsold in October, plus the 7.9 percent carried from September for a total of 53.8 percent. Additions from harvest and subtractions from sales are made throughout the corn marketing period until all of storage is liquidated in August 1996. The monthly distribution of corn harvesting in each of 1991-95 is obtained from NASS weather and crop bulletins (USDA, NASS, *Weekly Weather and Crop Bulletins*), while the monthly distribution of sales during the marketing year is also obtained from NASS (USDA, NASS, Agricultural Prices, various issues).

The charge for grain storage during the marketing period should reflect the ownership costs of on-farm bin storage and elevator storage charges. Storage is charged at 1.5 cents per bushel per month (table A-1). This is an average price for storing CCC stocks (USDA, FSA) and is consistent with the 1-2 cents per bushel estimated by Schwart for monthly ownership costs of on-farm storage facilities.

USDA production cost estimates include hauling costs from the field to the first point of sale or storage. Thus for grain hauled to on-farm storage and later sold, an additional cost of hauling from storage to the point of sale is incurred. Information in the 1990 Farm Costs and Returns Survey indicated that about 56 percent of corn was stored on-farm at harvest (USDA, ERS, Farm Cost and Returns Survey data, unpublished analysis). To estimate hauling costs, 56 percent of the crop sold in any month is assumed to be hauled from on-farm storage to market. Hauling is charged at 3 cents per bushel, an approximation of the average price paid by the CCC for hauling stocks (USDA, FSA; table A-1). Obviously, this could vary considerably from farm to farm according to the distance and quantity hauled.

Marketing fees for corn include costs associated with the corn checkoff program. The checkoff monies are used in research, market development, and education to increase the demand for corn. The charge for checkoff varies by State from about 0.1 to 1 cent per bushel. Checkoff was charged at 0.5 cents per bushel, the amount charged in most States of the major corn-producing areas (table A-1).

An interest charge on stored grain is included to reflect the opportunity cost of money tied up in stored grain during the marketing period. In any month the grain could be sold rather than stored, and the money invested elsewhere. The interest rate on 6-month Treasury bills is used to compute interest on the value of grain in storage during each month of the marketing period. Grain in storage during each month is valued using monthly corn prices during the 1991-95 period (USDA, NASS, *Agricultural Prices*, various issues).

USDA production costs include a charge for operating capital as the cost of carrying input expenses from the time they are used until harvest, assumed to average about 6

Table A1--Computing cash costs associated with marketing the 1995 U.S. corn crop

| Month/Yr | |-----Percent of crop-----| | | |---Bu. per planted acre[1]---| | | |---Cost per planted acre---| | |
	Harvested	Sold	Stored	Sold	Stored	Hauled	Storage[2]	Hauling[3]	Marketing[4]
Sep-95	16	8.1	7.9	9.38	9.15	5.25	0.14	0.16	0.05
Oct-95	63	17.1	53.8	19.81	62.31	11.09	0.93	0.33	0.10
Nov-95	21	12.9	61.9	14.94	71.69	8.37	1.08	0.25	0.07
Dec-95		8.0	53.9	9.27	62.43	5.19	0.94	0.16	0.05
Jan-96		17.4	36.5	20.15	42.27	11.29	0.63	0.34	0.10
Feb-96		8.3	28.2	9.61	32.66	5.38	0.49	0.16	0.05
Mar-96		8.5	19.7	9.84	22.82	5.51	0.34	0.17	0.05
Apr-96		6.2	13.5	7.18	15.64	4.02	0.23	0.12	0.04
May-96		4.3	9.2	4.98	10.66	2.79	0.16	0.08	0.02
Jun-96		3.3	5.9	3.82	6.83	2.14	0.10	0.06	0.02
Jul-96		3.4	2.5	3.94	2.90	2.21	0.04	0.07	0.02
Aug-96		2.5	0.0	2.90	0.00	1.62	0.00	0.05	0.01
Total costs							5.09	1.95	0.58

[1]Based on U.S. average yield of 115.82 bushels per planted acre.
[2]Storage is charged at 1.5 cents per bushel per month.
[3]Hauling is charged at 3 cents per bushel from farm storage to market with 56 percent of the crop stored on-farm.
[4]Marketing is charged at 0.5 cents per bushel for checkoff.

months. Operating capital reflects the opportunity cost of money tied up in these inputs until the time they generate a return. Because the time from input use to crop sales has been extended due to the marketing activity, the operating capital charge is made for 9 rather than 6 months. Operating capital is charged on the investment in all variable costs except for hauling (storage to market) and marketing fees using the 6-month Treasury bill rate.

The gross value of corn production is computed as the yield per planted acre valued at the marketing-year average price. Marketing-year average price for each year is computed by weighting the monthly corn prices from September to August by the percent of the crop marketed in each month (USDA, NASS, *Agricultural Prices*, various issues).

Effects of Marketing on Corn Cost And Returns

The results of incorporating marketing costs and returns into the USDA enterprise account for corn during 1991-95 are shown in table A-2. Items added or changed due to the inclusion of marketing costs and returns are highlighted. Marketing adds $7 to about $12 per acre to total variable costs, about 5-8 percent, depending on annual conditions. Variable costs of marketing are highest in 1992 and 1994 due to higher yields during these years. Total economic costs increase from $10 to nearly $18 per acre due to marketing charges. Record yields in 1994 result in the highest marketing costs, while costs are high in 1995 due to a greater interest charge for carrying the higher-valued corn stocks.

The difference between the marketing-year average corn price and the harvest-period corn price indicates gross returns associated with the marketing activity. Figure A-1 includes a comparison of the average annual marketing-year and harvest-period corn prices during 1991-95. Corn prices varied little in 1991 and 1992 as average marketing price was only slightly above the harvest price. However, starting in 1993 the corn market became increasingly volatile with the average marketing/harvest price spread growing from 11 cents to 19 cents in 1994, and to 46 cents per bushel in 1995.

Gross returns to corn marketing less the cash and economic costs of corn marketing for each year from 1991 to 1995 are shown in figure A-2. Both cash and residual returns to management and risk associated with corn marketing are positive in 3 of the 5 years. Net cash returns range from a loss of 6 cents per bushel in 1992 to a gain of nearly 40 cents in 1995, with an average gain of 11 cents. Likewise, residual returns reach a high of 33 cents in 1995 and average 7 cents per bushel during the 1991-95 period.

A comparison of net cash returns and residual returns to management and risk during 1991-95 for USDA production cost and return accounts excluding and including the direct effects of government programs, and the account that includes marketing costs and returns are shown in table A-3. Mean cash returns increase from $85.19 per acre, to $109.81 when government programs are included, to $123.17 when marketing costs and returns are added. Re-

Figure A-1
Average annual corn prices

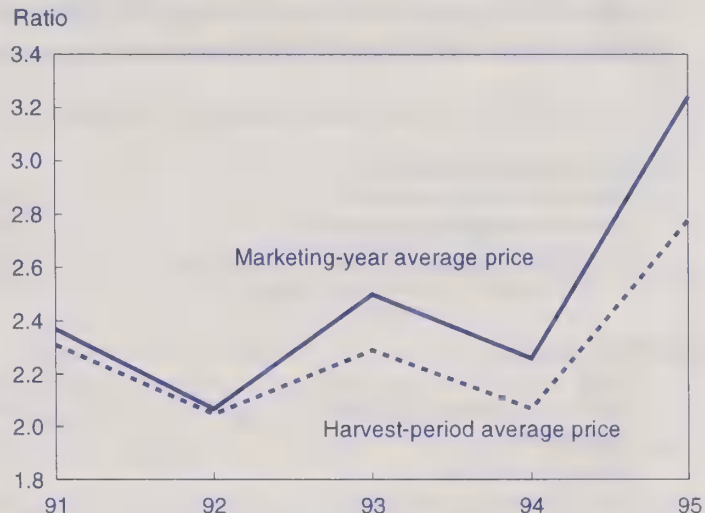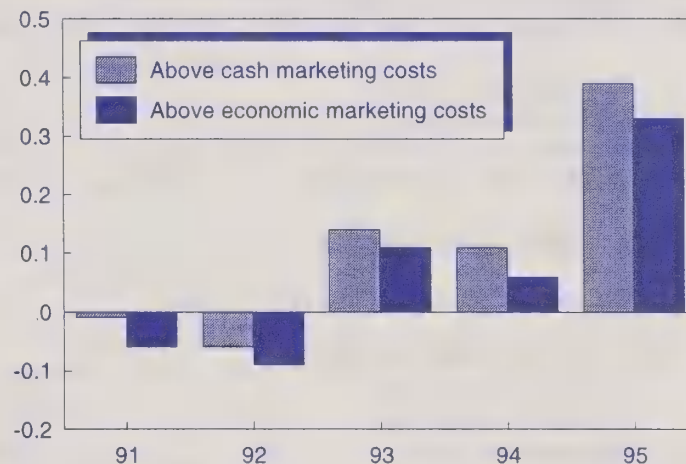

Figure A-2
Returns associated with corn marketing

sidual returns to production without government program effects are negative during 1991-95 with a mean of -$32.44. When government programs are included residual returns are positive in the 2 record production years, 1992 and 1994, and average -$14.56 over the 5-year period. The addition of marketing costs and returns also results in positive returns in only 2 of the 5 years, but the mean improves to -$6.71. While average returns increase when government program and marketing costs and returns are included, so does the variation in returns. The standard deviation of both cash and residual returns increases first when government program effects are added, then again when marketing is considered.

Conclusions

Returns to corn marketing are positive, on average, during 1991-95. This result suggests that the exclusion of marketing costs and returns from the traditional USDA account is a contributing factor to the persistent negative returns. However, more years of data are required to fully evaluate

Table A2—U.S. corn production and marketing cash and economic costs and returns, including the direct effects of Government program participation, 1991-95

Item	1991	1992	1993	1994	1995
	Dollars per planted acre				
Gross value of production:					
Market value of corn grain	261.60	277.01	247.88	323.52	375.26
Direct government payments 1/	28.23	48.30	21.97	42.19	1.14
Haying/grazing on ACR and CU acreage	0.43	0.32	0.71	0.11	0.62
Total, gross value of production	290.26	325.63	270.56	365.82	377.02
Cash expenses:					
Seed	21.61	22.10	22.49	22.67	23.98
Fertilizer, lime, and gypsum	44.59	43.16	43.26	46.07	55.85
Chemicals	22.56	23.53	24.46	25.25	26.52
Custom operations 2/	9.21	9.54	8.97	10.05	9.65
Fuel, lube, and electricity	19.26	18.49	18.52	19.02	18.26
Repairs	13.58	14.89	14.10	16.15	16.03
Hired labor	7.44	7.79	7.66	7.56	8.13
Storage	5.28	7.33	4.77	8.21	5.09
Hauling (storage to market)	1.85	2.25	1.67	2.40	1.95
Marketing fees 3/	0.55	0.67	0.50	0.72	0.58
Other variable cash expenses 4/	1.05	0.83	1.45	0.59	1.22
Total, variable cash expenses	146.98	150.58	147.85	158.69	167.26
General farm overhead	11.28	11.81	9.62	14.93	12.36
Taxes and insurance	19.45	19.67	20.08	21.53	21.23
Interest	17.89	16.14	12.47	17.34	16.28
Total, fixed cash expenses	48.62	47.62	42.17	53.80	49.87
Total, cash expenses	195.60	198.20	190.02	212.49	217.13
Gross value of production less cash expenses	94.66	127.43	80.54	153.33	159.89
Economic (full ownership) costs:					
Variable cash expenses	146.98	150.58	147.85	158.69	167.26
General farm overhead	11.28	11.81	9.62	14.93	12.36
Taxes and insurance	19.45	19.67	20.08	21.53	21.23
Capital replacement	27.52	30.25	28.85	32.98	32.83
Operating capital	5.86	3.93	3.37	5.42	6.86
Other nonland capital	10.34	11.98	11.52	13.37	13.46
Interest on stored grain	3.79	2.96	2.12	4.64	4.95
Land	68.04	75.43	61.46	75.87	68.71
Unpaid labor	23.76	25.14	24.50	24.07	25.53
Total, economic costs	317.02	331.75	309.37	351.50	353.19
Residual returns to management and risk	-26.76	-6.12	-38.82	14.32	23.83
Marketing-year average price (dollars/bu.)	2.37	2.07	2.50	2.26	3.24
Yield (bu./planted acre)	110.38	133.82	99.15	143.15	115.82
Percent of planted corn acres in program	69	67	70	74	69

1/ Deficiency payments. Payments are not adjusted for payment limitations. 2/ Cost of custom operations, technical services, and commercial drying. 3/ Cost of corn checkoff. 4/ Cost of purchased irrigation water, cover crop seed, and other input items.

Table A3--Mean cash returns and residual returns to management and risk for corn, estimated using alternative USDA accounting methods, 1991-95

Accounting method	Returns above cash costs		Residual returns to mgmt and risk	
	Dollars per planted acre	Standard deviation	Dollars per planted acre	Standard deviation
Production costs and returns	85.19	22.67	-32.44	16.14
Production and government program costs and returns	109.81	26.38	-14.56	20.22
Production, government and marketing costs and returns	123.17	31.33	-6.71	23.70

the level of long-term returns to management and risk associated with the corn enterprise.

Average returns increase when marketing costs and returns are incorporated into the USDA account, but the variability of returns is also higher. This implies that standard USDA accounts likely underestimate both the level and variation in returns associated with the corn enterprise. Recent changes in farm programs mean that producers will likely be subjected to greater crop price variation and income fluctuations as support payments are phased out. With market forces becoming more important in determining crop enterprise returns, accounting for both production and marketing would likely provide an enhanced measure of aggregate crop enterprise returns and risks.

References

Brooks, N.L. "Effects of Government Programs on Sorghum Production Costs and Returns, 1990" U.S. Dept. of Agriculture, Economic Research Service, Agricultural Information Bulletin 689. December 1993.

McBride, W.D.. "Effects of Government Programs on Corn Production Costs and Returns, 1991 and 1992" U.S. Dept. of Agriculture, Economic Research Service, Agricultural Information Bulletin 701. June 1994.

Salassi, M., M. Ahearn, M. Ali, and R. Dismukes. "Effects of Government Programs on Rice Production Costs and Returns, 1988" U.S. Dept. of Agriculture, Economic Research Service, Agricultural Information Bulletin 597. March 1990.

Schwart, R.B. "Investment, Ownership, and Energy Costs of New Bin Storage and of Hot Air Drying Facilities for Corn." Farm Economics: Facts and Opinions. No. 82-10. Dept. of Agricultural Economics. University of Illinois-Urbana. 1982.

U.S. Department of Agriculture, Economic Research Service. a. unpublished time-series data. commodity costs and returns, 1975-1995.

U.S. Department of Agriculture, Economic Research Service. b. 1990 Farm Costs and Returns Survey data. unpublished analysis.

U.S. Department of Agriculture, Farm Services Administration. personal contact.

U.S. Department of Agriculture, National Agricultural Statistics Service. a. *Weekly Weather and Crop Bulletin*. various issues. 1991-1995.

U.S. Department of Agriculture, National Agricultural Statistics Service. b. *Agricultural Prices*. various issues. 1991-1995.

Forecasting Prices That Farmers Pay For Production Inputs

by

John Jinkins, David Torgerson, Christopher McGath, and Daryl Brinkman

Abstract: Indicators used to forecast farm production input prices include forecasts of both general economic conditions, such as wage rates, and farm economic conditions, such as corn prices. Through 2000, lower feed prices could be the largest dampening influence on farm input prices, while farm wage rates may rise. The change in farm input prices through 2000 should about equal the economywide change in producer input prices.

The amount farmers spend for production inputs to generate a dollar of income has been trending up. In 1950, farmers spent 54 cents on inputs for each dollar of income they generated. The amount ranged between 54 and 67 cents during 1951 through 1973 while the range shifted up to between 64 and 80 cents during 1974 through 1995 (see figure B-1 for further detail). This upward shift reflects the growing dependence of farmers on purchased inputs as farm sizes have increased and farmers have begun to use increasingly sophisticated technologies such as genetically altered seed and hormones to promote plant and animal growth. When ERS forecasts farm income and financial conditions, the trend of increasing input expense places greater importance on insight into what makes farm input prices rise or fall.

Prices Paid Indices Used To Represent Production Input Prices

Farmers use so many different types of inputs that forecasting prices for individual items is impractical. Think for example of the many kinds of chemicals farmers use to control weeds, insects, and plant diseases. ERS simplifies the problem by forecasting the 15 farm prices paid indices constructed by the National Agricultural Statistics Service (NASS). Each of these indices combines prices for a similar group of inputs. For instance, the agricultural chemicals producer price index combines prices for chemicals used to control all types of agricultural pests. The materials for which farmers spend the most have the largest influences on the indices. Farmers spend more for chemicals to control weeds than for chemicals to combat insects and plant diseases, so changes in prices of weed control chemicals would cause a larger increase in the agricultural chemicals index than would equal changes in prices of other kinds of agricultural chemicals.

The National Agricultural Statistics Service recently revised the farm prices paid indices so that they would better reflect the mix of inputs farmers currently use to produce crops and livestock. The previous indices compared input prices to those of 1973, the new indices compare input prices to their 1990-92 average. To incorporate those improvements, ERS revised its methods for forecasting farm prices paid indices. This article describes the indicators ERS will follow as it attempts to gauge future farm input prices and present a scenario of how those prices could change through the year 2000.

Some Farm Input Prices Depend Largely on the Farm Economy, While Others Are Tied to the General Economy

Livestock feed is one of the best examples of a farm production input whose price can be explained by farm economic conditions, specifically commodity prices. That's because farmers themselves produce most of the items represented by the feed producer price index. The corn price outlook has the largest influence on ERS feed producer price index forecasts. Farmers devote 15 percent of their feed expenditures to shelled corn. In addition, mixed feeds, which can contain corn and a variety of other ingre-

Figure B-1

The amount farmers spend for production inputs to generate a dollar of income has been trending up

Cents
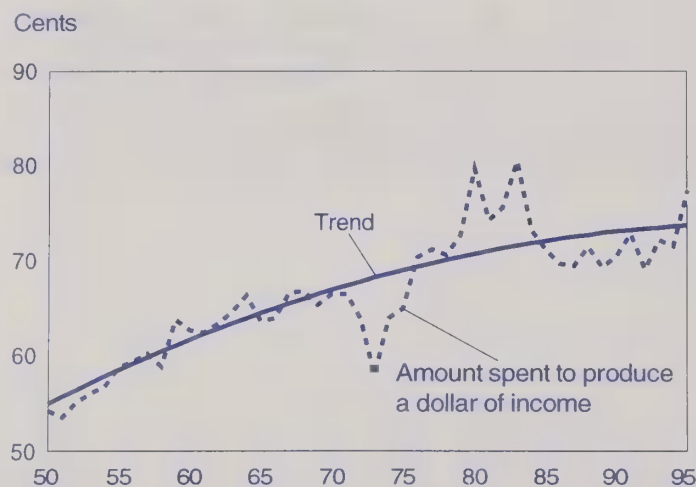
Table B1—Forecasts of some farm prices paid indices, such as the feed index, depend on the farm economy while forecasts of others, such as the fuel index, are tied to the general economy

For this prices paid index:	ERS will consider the outlook for these items when making the 1998 forecast: (mya = marketing year average 1/)	An increase in this item will have this effect on the forecast:
feed	ratio of 1998 corn mya price to 1997 corn mya price	increase
	ratio of 1997 corn mya price to 1996 corn mya price	increase
	ratio of 1997 soy meal mya price to 1996 soy meal mya price	increase
	ratio of 1998 all hay mya price to 1997 all hay mya price	increase
livestock & poultry	1998 feeder steer price, 750-800 pounds, Oklahoma City	increase
	1997 feeder steer price, 750-800 pounds, Oklahoma City	increase
	1998 milk price	increase
	1997 corn mya price	decrease
seeds	sum of 1997 acres planted to corn, wheat, and soybeans	increase
	1998 inflation as measured by the producer price index	increase
	1997 corn yield	decrease
fertilizer	1998 crude oil price	increase
	average of 1998 and 1997 corn mya prices	increase
	trend over time measured as a constant annual increase	increase
agricultural chemicals	average of 1998 and 1997 corn mya prices	increase
	1997 fertilizer producer price index	increase
	trend over time measured as a constant annual increase	increase
	average of 1998 and 1997 crude oil prices	decrease
fuels	1998 crude oil price	increase
	1997 inflation as measured by the producer price index	increase
supplies & repairs	1998 inflation as measured by the producer price index	increase
autos & trucks	1997 inflation as measured by consumer price index	increase
farm machinery	1998 inflation as measured by the producer price index	increase
building material	1998 inflation as measured by the producer price index	increase
farm services	1998 inflation as measured by consumer price index	increase
rent	1998 land prices	increase
	sum of 1998 values of production of corn, soybeans, & wheat	increase
interest	1998 Moody's AAA bond rate	increase
	1998 prime rate	increase
taxes	1998 inflation as measured by consumer price index	increase
wage rates	1998 average hourly earnings in nonagricultural industries	increase
	trend over time measured as a constant annual increase	increase

1/ corn marketing year begins September 1, soy meal marketing year begins October 1, hay marketing year begins May 1

dients, account for 44 percent of farmer expenditures on feed. The soybean price outlook has the second largest influence on the feed index forecasts. Soymeal accounts for 15 percent of feed expenditures and like corn is an important ingredient in mixed feeds (see table B-1 for further detail). Changes in the livestock and poultry producer price index are also closely linked to farm commodity prices, especially beef cattle prices. About 80 percent of what farmers spend for livestock goes for young cattle that are fed for later resale.

Fertilizer is an example of a farm production input whose price is influenced by both the farm and general economies. The outlook for crude oil prices, determined entirely outside the farm economy, has an important influence on ERS fertilizer producer price index forecasts. That's because crude oil prices influence natural gas prices and natural gas is an important input for nitrogen fertilizer producers. Farmers devote 43 percent of their fertilizer expenditures to nitrogen fertilizers. Additionally, nitrogen fertilizers are an important component of mixed fertilizers, which also account for 43 percent of farmer fertilizer expenditures. ERS uses the outlook for corn prices to gauge farm economy influences on the fertilizer price index. Corn is a major fertilizer user and has had the largest planted acreage of any crop each year since 1991, so strong corn prices can boost fertilizer demand, leading to higher fertilizer prices.

Conditions in the farm economy have little influence on prices farmers pay for fuel. Fifty-three percent of what farmers spend for fuel goes for diesel fuel, while 35 percent goes for gasoline. Crop and livestock production accounts for just a small portion of total fuel consumption so demand for fuel is driven largely by the general economy. ERS considers both the crude oil price outlook and forecasts of producer price inflation in the general economy when forecasting the farm producer price index for fuel.

General economic conditions also influence wages farmers pay their hired workers. A strong economy can lead to job creation, competition for workers, and wage increases. Facing those increases, many farmers may have to raise the wages they pay to compete for workers. When forecasting the wage prices paid index, ERS looks at both the outlook for wages in the general economy and the tendency of farm wages to increase over time.

Farmer-Produced Inputs Could Have the Largest Price Changes During 1997-2000

Through 2000, lower feed prices could be the largest dampening influence on overall farm input prices as measured by the production items, interest, taxes, and wage index (PITW). That's because world stocks of grains and oilseeds are expected to rebuild from the low levels of the mid-1990's, moderating prices of important feed ingredients such as corn and soybeans. In contrast, higher prices for another farmer produced input - young livestock to feed for later resale - could be the largest upward influence on the PITW. Strong meat exports and reductions in the cattle herd should bolster livestock prices, increasing demand and prices for feeder livestock.

Among input prices driven by both the farm and general economies, wage rates could provide one of the strongest upward pushes to the PITW. The general economy is expected to be strong through 2000, increasing demand for labor and prompting farmers to raise wages to attract workers. Fertilizer price increases could push the PITW up less than wages, given the current outlook for stable oil prices. Also, farmers may apply less fertilizer given the expected moderation in grain and oil seed prices. This lower demand would take pressure off of fertilizer prices. The cumulative change in the PITW through 2000 should about equal, or perhaps be slightly lower than, the economywide change in producer input prices as measured by the producer price index for finished goods.

Changes in the Feed and Labor Indices Would Have the Largest Influence on Expenses for Many Types of Farms

The sensitivity of what a farmer spends for production inputs to changes in a particular prices paid index varies by region, commodity specialization, and location. This article looks at commercial farms, those with $50,000 or more in annual sales, to examine those sensitivities. Commercial farms produce most of the Nation's crops and livestock. For example, commercial farms in the Lake States, Corn Belt, and Northern Plains produce three-fourths of the Nation's corn crop, while noncommercial sized farms in those regions produce under 10 percent.

ERS considers a farm to specialize in a commodity if more than 50 percent of the value of everything it produces comes from that commodity. For instance, corn accounts for more than 50 percent of the value of everything produced on commercial corn farms. In 1995, the latest year for which ERS has survey information, the cash expenses of farmers that specialize in crops would have been most sensitive to changes in the fertilizer and farm services indices. The farm services index groups a broad array of prices for services including custom harvesting and contract labor.

On commercial corn farms, 17 percent of cash expense went for fertilizer in 1995. For these farms, a 10-percent higher fertilizer index would have translated into 2 percent higher cash expenses (see table B-2 for more detail). In contrast, farmers specializing in hog production devoted less than half a percent of their cash expenses to fertilizer, so a 10-percent higher fertilizer index would have had little effect on their expenses. Commercial livestock farms would have been the most sensitive to changes in the feed and feeder livestock indices. On commercial hog farms a 10-percent increase in the feed index would have increased cash expense by 4 percent. The effect on corn farms would have been minimal. You should view these results as rules of thumb - given the price changes examined here farmers would attempt to change the mix of inputs they use, especially if prices remained higher for several years.

Expenses on operations with over $250,000 in annual sales would have been most sensitive to changes in the feed index while those of more moderate sized operations would have been affected most by changes in the farm services index. When farms are divided by regions, changes in the feed index would most often have had the largest influence on cash expenses followed by changes in the farm services and wage rates indices.

Figure B-2

ERS forecasts that in 1997-2000 major influences on the farm prices paid index for production items, interest, taxes, and wages (PITW) will include. . .
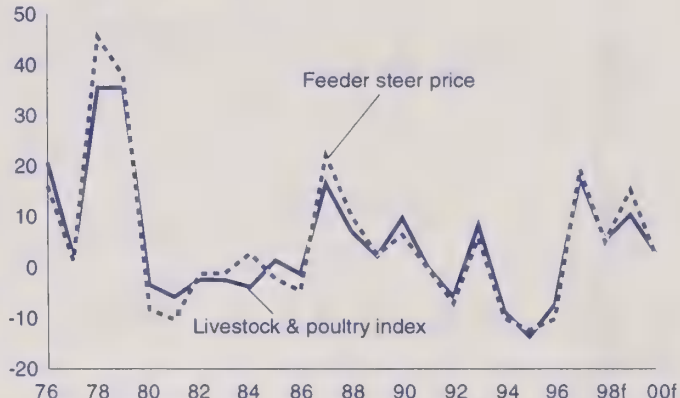
Lower feed prices--partly due to lower corn prices--could be the largest negative influence on the PITW index

% change from previous year
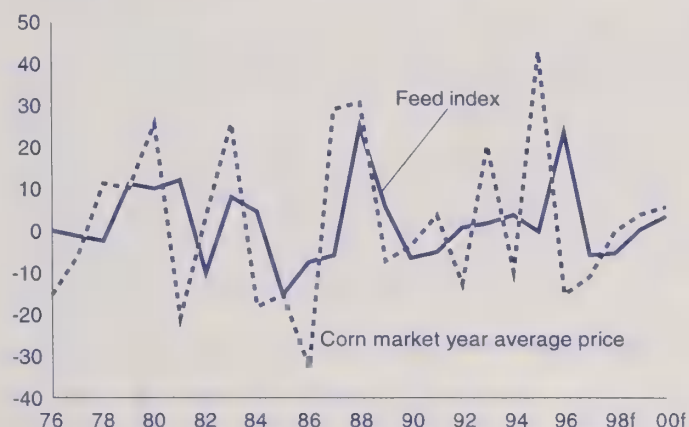
Higher prices for feeder livestock--generated by higher beef cattle prices--could be the largest postive influence on the PITW index

% change from previous year

Higher wages-spurred by wage increases in the general ecomony

% change from previous year
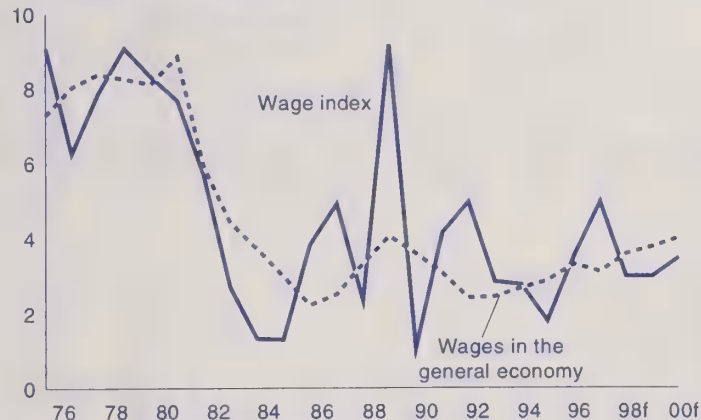
Higher prices for supplies and repairs--due to increase in producer prices in the general economy

% change from previous year
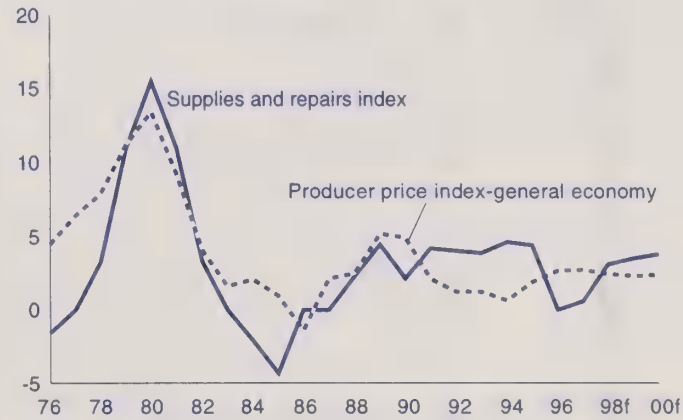
Moderate increases in fertilizer prices--partly due to expected stability in crude oil prices

% change from previous year

The total change through 2000 in the PITW could be close to the total change in producer prices in the general economy

% change from previous year

Table B2-- Increases in the feed and farm services price indices would have increased 1995 expenses the most on many types of commercial farms 1/

Would have had this percent increase in their 1995 cash expenses given a 10 percent increase in the prices paid index for:

percent change (* = less than half a percent)

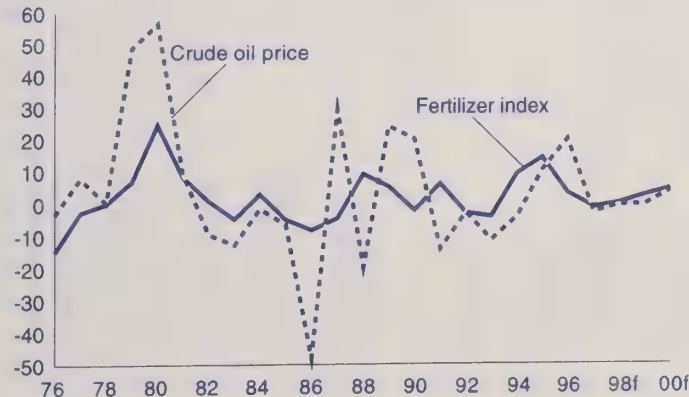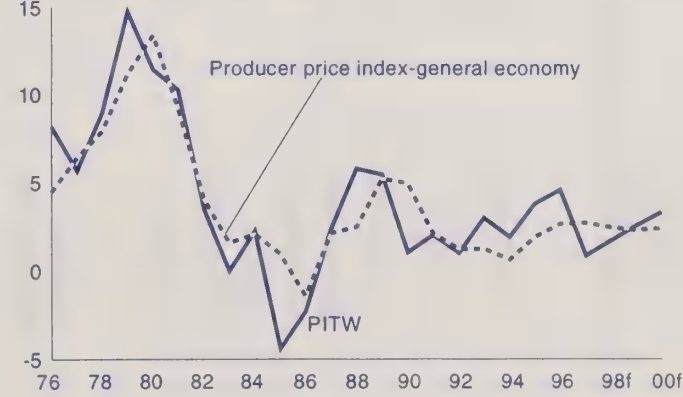| Commercial farms with this characteristic:	Feed	Livestock & poultry	Seed	Fertilizer	Chem.	Fuels	Supplies & repairs	Building material	Farm services	Interest	Taxes	Wage rates
Region 2/												
Northeast	2.5	*	*	0.5	*	*	0.9	*	1.5	0.5	*	1.7
Lake States	1.8	0.5	0.5	0.7	0.6	*	1.0	*	1.3	0.8	0.5	0.9
Corn Belt	1.5	0.8	0.6	1.2	0.9	*	0.7	*	0.9	0.7	0.5	0.5
Northern Plains	1.1	1.3	0.5	0.9	0.6	0.5	0.8	*	1.3	0.9	0.5	0.5
Appalachian	2.6	1.7	*	0.6	0.5	*	0.6	*	1.0	0.5	*	1.1
Southeast	1.9	0.7	0.5	0.7	0.8	*	0.7	*	1.3	0.5	*	1.9
Delta	2.5	1.3	*	0.6	1.0	*	0.6	*	1.4	0.5	*	0.7
Southern Plains	2.7	2.0	*	0.5	*	*	0.6	*	1.1	0.5	*	0.9
Mountain	2.1	1.2	*	0.5	*	*	0.6	*	1.4	0.7	*	1.4
Pacific	1.6	*	*	0.5	0.5	*	0.8	*	1.5	0.6	*	2.8
Commodity specialization:												
wheat	*	*	0.5	1.4	0.8	0.7	1.1	*	1.6	1.1	0.6	0.6
corn	*	*	0.9	1.7	1.2	0.6	0.8	*	1.0	0.8	0.7	*
other grain	0.5	*	0.7	1.5	1.1	0.5	0.9	*	1.1	0.8	0.6	0.6
soybean	*	*	1.0	1.7	1.5	0.5	0.8	*	0.9	0.8	0.6	*
cotton	*	*	*	1.3	2.3	0.6	0.8	*	1.5	0.5	*	1.1
beef	2.5	3.0	*	*	*	*	*	*	0.9	0.6	*	0.7
hogs	4.4	1.5	*	*	*	*	*	*	0.8	0.6	*	0.5
dairy	4.0	*	*	*	*	*	0.8	*	1.5	0.7	*	1.1
Sales class ($ 1000)												
$500 or over	2.4	1.2	*	0.5	0.5	*	0.6	*	1.1	0.5	*	1.8
$250 to $499	1.6	0.6	0.5	0.9	0.8	*	0.7	*	1.3	0.6	*	1.1
$100 to $249	1.4	0.7	0.5	0.9	0.7	0.5	0.8	*	1.4	0.8	0.5	0.8
$ 50 to $ 99	1.2	*	0.5	0.9	0.6	0.6	1.0	*	1.5	1.0	0.6	0.7

1/ Commercial farms have at least $50,000 in annual sales.
2/ The states in each region are:
Northeast - CT, DE, ME, MD, MA, NH, NJ, NY, PA, RI, VT Lake States - MI, MN, WI Corn Belt - IL, IN, IA, MO, OH
Northern Plains - KS, NE, ND, SD Appalachia - KY, NC, TN, VA, WV Southeast - AL, FL, GA, SC Delta - AR, LA, MS
Southern Plains - OK, TX Mountain - AZ, CO, ID, MT, NV, NM, UT, WY Pacific - CA, OR, WA

List of Tables

Appendix table 1--Farm income statements, 1992-97F

	1992	1993	1994	1995	1996F	1997F
	Billion Dollars					
Cash income:						
1. Cash receipts	171.3	177.6	180.8	185.8	201.9	201.1
Crops 1/	85.7	87.5	92.6	98.9	109.1	105.8
Livestock	85.6	90.2	88.1	86.8	92.9	95.3
2. Direct Government payments	9.2	13.4	7.9	7.3	7.3	7.6
3. Farm-related income 2/	8.2	9.1	9.2	10.9	10.7	11.0
4. Gross cash income (1+2+3)	188.7	200.1	197.8	203.9	220.0	219.7
5. Cash expenses 3/	133.2	141.2	147.4	155.1	162.8	165.5
6. NET CASH INCOME (4-5)	55.5	58.9	50.5	48.8	57.1	54.1
Farm income:						
7. Gross cash income (1+2+3)	188.7	200.1	197.8	203.9	220.0	219.7
8. Nonmoney income 4/	7.7	8.5	9.8	9.9	10.3	11.0
9. Inventory adjustment	4.2	-4.5	8.2	-3.4	2.8	1.1
10. Total gross income (7+8+9)	200.6	204.2	215.8	210.4	233.0	231.7
11. Total expenses	152.5	160.5	167.4	175.6	183.7	186.8
12. NET FARM INCOME (10-11)	48.0	43.6	48.4	34.8	49.3	44.9

F = forecast. Totals may not add due to rounding.

1/ Includes payments received from CCC for placements of crops under nonrecourse loans.

2/ Income from machine hire and customwork, forest product sales, custom feeding service fees, and other farm sources.

3/ Excludes expenses for onfarm operator dwellings and noncash items such as capital consumption and perquisites to hired labor.

4/ Includes the value of home consumption of farm products plus imputed rental value of operator dwellings.

Appendix table 2--Deriving farm operator household income estimates from the Farm Costs and Returns Survey (FCRS) that are consistent with Current Population Survey (CPS) methodology, 1992-97 1/

	1992	1993	1994	1995	1996F	1997F
			Dollars per farm			
Net cash farm business income 2/	11,320	11,248	11,389	11,218	n.a.	n.a.
Less depreciation 3/	5,187	6,219	6,466	6,795	n.a.	n.a.
Less wages paid to operator 4/	216	454	425	522	n.a.	n.a.
Less farmland rental income 5/	360	534	701	769	n.a.	n.a.
Less adjusted farm business income due to other household(s)	961	872	815	649	n.a.	n.a.
			Dollars per farm operator household			
Equals adjusted farm business income	4,596	3,168	2,981	2,484	n.a.	n.a.
Plus wages paid to operator	216	454	425	522	n.a.	n.a.
Plus net income from farmland rental 7/	360	n.a.	n.a.	1,053	n.a.	n.a.
Equals farm self-employment income	5,172	3,623	3,407	4,059	n.a.	n.a.
Plus other farm-related earnings 8/	2,008	1,192	970	661	n.a.	n.a.
Equals earnings of the operator household from farming activities	7,180	4,815	4,376	4,720	5,535	5,251
Plus earnings of the operator household from off-farm sources 9/	35,731	35,408	38,092	39,671	40,893	42,292
Equals average farm operator household income comparable to U.S. average household income, as measured by the CPS	42,911	40,223	42,469	44,392	46,428	47,543
			Dollars per U.S. household			
U.S. average household income 10/	38,840	41,428	43,133	44,938	n.a.	n.a.
			Percent			
Average farm operator household income as percent of U.S. average household income	110.5	97.1	98.5	98.8	n.a.	n.a.
Average operator household earnings from farming activities as percent of average operator household income	16.7	12.0	10.3	10.6	n.a.	n.a.

F = forecast. n.a. = not available.

1/ The Current Population Survey (CPS), conducted by the Census Bureau, is the source of official U.S. household income statistics. The CPS defines income to include any income received as cash. In-kind receipts are excluded. The CPS definition departs from a strictly cash concept by including depreciation in the list of operating expenses that farm operators and other self-employed people subtract from gross receipts when they report net money income.

2/ A component of farm sector income. Excludes income of contractors and landlords as well as the income of farms organized as nonfamily corporations or cooperatives and farms run by a hired manager. Includes the income of farms organized as proprietorships, partnerships, and family corporations, which are all closely held by households.

3/ Consistent with the CPS definition of self-employment income, reported depreciation expenses are subtracted from net cash farm income. The Farm Costs and Returns Survey collects farm business depreciation used for tax purposes.

4/ Wages paid to the operator are subtracted here because they are not shared among other households that have claims on farm business income. These wages are added to the operator household's adjusted farm business income to obtain farm self-employment income.

5/ Gross rental income is subtracted here because net rental income from the farm operation is added below to income received by the household.

6/ More than one household per farm may have a claim on the income of a farm business. The national average is 1.1 households per farm sharing the income of a farm business.

7/ Includes net rental income from the farm business. Also includes net rental income from farmland held by household members that is not part of the farm business. In 1992 gross rental income from the farm business was used because net rental data were not collected. In 1993 and 1994, net rental income was collected as a part of off-farm income.

8/ Includes wages paid to other operator household members by the farm business and earnings (net income) from a farm business other than the one being surveyed.

9/ Income from wages, salaries, nonfarm businesses, interest, dividends, transfer payments, net rental income from nonfarm properties, inc. In 1993 and 1994, also includes net rental income from farmland.

10/ From the Current Population Survey.

Appendix table 3--Relationship of net cash to net farm income, 1992-97F

	1992	1993	1994	1995	1996F	1997F
			Billion Dollars			
Gross cash income	188.7	200.1	197.8	203.9	220.0	219.7
Minus cash expenses	133.2	141.2	147.4	155.1	162.8	165.5
Equals net cash income	55.5	58.9	50.5	48.8	57.1	54.1
Plus nonmoney income 1/	7.7	8.5	9.8	9.9	10.3	11.0
Plus value of inventory change	4.2	-4.5	8.2	-3.4	2.8	1.1
Minus noncash expenses	15.2	15.2	15.4	15.7	15.9	16.2
Labor perquisites	0.5	0.4	0.4	0.6	0.7	0.6
Net capital consumption	14.7	14.8	15.0	15.1	15.2	15.6
Capital consumption exc. dwellings	16.1	16.2	16.4	16.5	16.7	17.1
- Landlord capital consumption	1.4	1.4	1.4	1.4	1.5	1.5
Minus operator dwelling expenses	4.1	4.1	4.6	4.8	4.9	5.1
Capital consumption	2.2	2.2	2.4	2.6	2.6	2.7
Interest	0.4	0.4	0.4	0.4	0.5	0.5
Property taxes	0.6	0.7	0.8	0.9	0.9	0.9
Repair and maintenance	0.6	0.5	0.6	0.5	0.5	0.6
Insurance	0.3	0.3	0.4	0.4	0.4	0.4
Equals net farm income	48.0	43.6	48.4	34.8	49.3	44.9

F = forecast.

1/ The value of home consumption and gross rental value of all dwellings.

Appendix table 4--Cash receipts, 1992-97F

	1992	1993	1994	1995	1996F	1997F
			Billion dollars			
Crop receipts 1/	85.7	87.5	92.6	98.9	109.1	105.8
Food grains	8.5	8.2	9.5	10.1	11.5	10.2
Wheat	7.2	7.5	7.9	8.8	10.0	8.6
Rice	1.3	0.7	1.7	1.3	1.6	1.6
Feed grains and hay	20.1	20.2	20.3	23.1	28.0	25.2
Corn	14.7	14.6	14.7	17.4	21.6	18.7
Sorghum, barley, and oats	2.3	2.0	2.0	2.1	3.0	2.5
Oil crops	13.3	13.2	14.7	14.8	17.8	19.6
Soybeans	11.6	11.8	12.8	13.2	16.2	18.1
Peanuts	1.3	1.0	1.2	1.0	1.0	1.0
Cotton lint and seed	5.2	5.2	6.7	7.6	7.5	6.7
Tobacco	3.0	2.9	2.6	2.6	2.9	3.2
Fruits and nuts	10.2	10.3	10.2	10.8	11.3	10.9
Vegetables	11.9	13.5	13.7	14.8	14.3	13.7
Greenhouse & nursery	9.3	9.6	10.0	10.4	10.9	11.5
Livestock receipts 2/	85.6	90.2	88.1	86.8	92.9	95.3
Red meats	47.7	50.8	46.8	44.6	44.4	48.2
Cattle and calves	37.3	39.4	36.4	34.0	31.1	34.0
Hogs	10.0	10.9	9.9	10.1	12.6	13.6
Sheep and lambs	0.5	0.6	0.5	0.6	0.6	0.6
Poultry and eggs	15.5	17.3	18.4	19.1	22.3	22.7
Broilers	9.2	10.4	11.4	11.8	13.9	14.5
Turkeys	2.4	2.5	2.6	2.8	3.1	3.1
Eggs	3.4	3.8	3.8	4.0	4.8	4.5
Dairy products	19.7	19.2	19.9	19.9	22.8	21.1
TOTAL RECEIPTS	171.3	177.6	180.8	185.8	201.9	201.1

F = forecast. Totals may not add due to rounding.
1/ Includes sugar, seed, and other miscellaneous crops.
2/ Includes miscellaneous livestock and livestock products.

Appendix table 5--Farm production expenses, 1992-97F

	1992	1993	1994	1995	1996F	1997F
			Billion dollars			
Farm-origin	38.6	41.2	41.3	42.5	43.4	43.8
Feed purchased	20.1	21.4	22.6	24.5	25.7	24.2
Livestock and poultry purchased	13.4	14.6	13.2	12.6	11.5	13.3
Seed purchased	4.9	5.2	5.4	5.5	6.2	6.3
Manufactured inputs	20.1	20.5	21.7	23.4	25.7	26.2
Fertilizer and lime	8.3	8.4	9.2	10.0	10.9	11.2
Pesticides	6.5	6.7	7.2	7.7	8.6	8.8
Petroleum fuel and oils	5.3	5.3	5.3	5.7	6.1	6.3
Interest	11.2	10.8	11.8	12.8	13.3	13.4
Nonreal estate	5.4	5.3	6.0	6.7	7.0	7.0
Real estate	5.8	5.5	5.9	6.1	6.3	6.4
Other operating expenses	47.3	52.4	55.7	60.0	60.9	62.7
Repair and maintenance	8.5	9.2	9.2	9.4	10.2	10.6
Machine hire and customwork	3.8	4.4	4.8	4.8	4.8	5.0
Marketing, storage & transportation	4.5	5.6	6.7	7.2	6.9	7.2
Labor	14.0	15.0	15.3	16.3	17.0	17.7
Miscellaneous	16.5	18.2	19.7	22.3	22.0	22.2
Other overhead expenses	35.3	35.6	37.0	36.9	40.4	40.7
Capital consumption	18.3	18.4	18.8	19.1	19.3	19.7
Property taxes	6.2	6.3	6.7	6.9	6.9	7.1
Net rent to nonoperator landlords	10.8	10.9	11.5	10.9	14.2	13.9
Total production expenses	152.5	160.5	167.4	175.6	183.7	186.8
Noncash expenses	15.2	15.2	15.4	15.7	15.9	16.2
Labor perquisites	0.5	0.4	0.4	0.6	0.7	0.6
Net capital consumption	14.7	14.8	15.0	15.1	15.2	15.6
Capital consumption exc. dwellings	16.1	16.2	16.4	16.5	16.7	17.1
- Landlord capital consumption	1.4	1.4	1.4	1.4	1.5	1.5
Operator dwelling expenses	4.1	4.1	4.6	4.8	4.9	5.1
Capital consumption	2.2	2.2	2.4	2.6	2.6	2.7
Interest	0.4	0.4	0.4	0.4	0.5	0.5
Property taxes	0.6	0.7	0.8	0.9	0.9	0.9
Repair and maintenance	0.6	0.5	0.6	0.5	0.5	0.6
Insurance	0.3	0.3	0.4	0.4	0.4	0.4
Cash expenses 1/	133.2	141.2	147.4	155.1	162.8	165.5

F = forecast.

1/ Total production expenses minus noncash and onfarm operator dwelling expenses.

Appendix table 6--Value added by the agricultural sector, 1992-97F 1/

	1992	1993	1994	1995	1996F	1997F
	Billion dollars					
Crop output	89.0	81.9	99.8	95.1	113.2	108.2
Cash receipts	85.7	87.5	92.6	98.9	109.1	105.8
Home consumption	0.1	0.1	0.1	0.1	0.1	0.1
Value of inventory adjustment	3.2	-5.6	7.1	-3.9	4.0	2.3
Livestock and poultry output	87.1	91.7	89.7	87.7	92.0	94.5
Cash receipts	85.6	90.2	88.1	86.8	92.9	95.3
Home consumption	0.5	0.5	0.4	0.4	0.4	0.4
Value of inventory adjustment	1.0	1.1	1.1	0.5	-1.3	-1.2
Farm-related income	8.2	9.1	9.2	10.9	10.7	11.0
Gross rental value of						
farm dwellings	7.1	8.0	9.3	9.4	9.7	10.4
Equal: Agricultural sector output	191.4	190.8	208.0	203.1	225.6	224.1
Less: Intermediate consumption outlays	93.4	100.4	104.7	111.2	114.5	116.5
Farm origin	38.6	41.2	41.3	42.5	43.4	43.8
Feed purchased	20.1	21.4	22.6	24.5	25.7	24.2
Livestock and poultry purchased	13.6	14.6	13.2	12.6	11.5	13.3
Seed purchased	4.9	5.2	5.4	5.5	6.2	6.3
Manufactured inputs	20.1	20.5	21.7	23.4	25.7	26.2
Fertilizer and lime	8.3	8.4	9.2	10.0	10.9	11.2
Pesticides	6.5	6.7	7.2	7.7	8.6	8.8
Fuel and oils	5.3	5.4	5.3	5.7	6.1	6.3
Other	34.7	38.8	41.8	45.2	45.4	46.5
Repair and maintenance	8.5	9.2	9.2	9.4	10.2	10.6
Machine hire and customwork	3.8	4.4	4.8	4.8	4.8	5.0
Marketing, storage, and						
transportation	4.5	5.6	6.7	7.2	6.9	7.2
Contract labor	1.7	1.8	1.8	2.0	2.0	2.0
Miscellaneous	16.2	17.8	19.3	21.8	21.6	21.7
Plus: Net Government transactions	2.6	6.7	0.8	-0.1	-0.1	-0.0
+Direct Government Payments	9.2	13.4	7.9	7.3	7.3	7.6
-Vehicle registration and						
licensing fees	0.4	0.4	0.4	0.5	0.5	0.5
-Property taxes	6.2	6.3	6.7	6.9	6.9	7.1
Equal: Gross value added	100.6	97.1	104.0	91.9	111.0	107.6
Less: Capital consumption	18.3	18.4	18.8	19.1	19.3	19.7
Equal: NET VALUE ADDED	82.3	78.7	85.2	72.8	91.7	87.9

F = forecast.

1/ Components are from the farm income accounts and include income and expenses related to farm operator dwellings. The concept is consistent with that employed by the Organization for Economic Cooperation and development.

Appendix table 7--Farm business balance sheet, 1992-97F

	1992	1993	1994	1995	1996F	1997F
			Billion Dollars			
Farm assets	868.9	904.6	938.1	978.0	1,038.3	1,085.0
Real estate	642.8	673.4	706.9	755.7	811.0	855.0
Livestock and poultry	71.0	72.8	67.9	58.1	60.0	59.0
Machinery and motor vehicles	85.5	86.7	87.9	86.9	89.0	90.0
Crops stored 1/	22.7	20.4	22.5	25.1	26.8	28.0
Purchased inputs	3.9	4.2	5.0	3.4	4.5	5.0
Financial assets	43.1	46.6	47.8	48.8	47.0	48.0
Farm debt	139.0	141.9	146.8	150.8	156.1	162.0
Real estate 2/	75.4	76.0	77.7	79.3	81.8	84.0
Nonreal estate	63.6	65.9	69.1	71.5	74.4	77.0
Farm equity	729.9	762.6	791.3	827.2	882.3	923.0

F = forecast
1/ Non-CCC crops held on farm plus value above loan rate for crops held under CCC.
2/ Includes CCC storage and drying facility loans.

Appendix table 8--Farm sector rates of return, 1992-97F

	1992	1993	1994	1995	1996F	1997F
			Percent			
Rate of return on assets	4.1	3.0	3.7	1.7	4.2	3.5
Real capital gains on assets	-0.1	2.3	1.3	3.5	1.7	1.7
Total real return on assets 1/	4.0	5.3	5.0	5.2	5.9	5.2
Average interest rate paid on debt	7.8	7.4	7.9	8.3	8.2	8.2
Real capital gains on debt	3.1	2.3	2.4	2.0	3.5	3.7
Real cost of debt 2/	4.7	5.2	5.5	6.3	4.7	4.5
Rate of return on equity	3.4	2.2	4.9	0.5	3.4	2.6
Real capital gains on equity	1.0	5.1	1.9	4.5	2.4	2.4
Total real return on equity 3/	4.4	5.4	4.8	5.0	5.9	5.0
Real net return on assets financed by debt 4/	-0.4	0.2	-0.5	-1.1	1.2	0.7

P= preliminary. F = forecast. Numbers may not add due to rounding.

1/ Rate of return on assets from current income plus rate of return from real capital gains.

2/ Average interest rate paid on farm debt minus real capital gains on debt.

3/ Rate of return on equity plus rate of return from real capital gains.

4/ Total real return on farm assets minus the real cost of debt. When the total real rate of return on assets exceeds the total real cost of farm debt, debt financing is advantageous.

Appendix table 9--Farm financial measures: 1992-97F

Ratios	1992	1993	1994	1995	1996F	1997F
			Ratio			
Liquidity ratios:						
Farm business debt service coverage 1/	2.42	2.55	2.16	2.01	2.26	2.1
Debt servicing 2/	0.14	0.14	0.14	0.15	0.14	0.14
Times interest earned ratio 3/	5.84	5.59	5.66	4.24	5.40	4.9
Solvency ratios:						
Debt/asset 4/	16.0	15.7	15.6	15.4	15.0	14.6
Debt/equity 5/	19.1	18.6	18.6	18.2	17.7	17.0
Profitability ratios:						
Return on equity 6/	3.4	2.2	2.9	0.5	3.4	2.4
Return on assets 7/	4.1	3.0	3.7	1.7	4.2	3.3
Financial efficiency ratios:						
Gross ratio 8/	70.7	70.6	74.5	76.2	73.8	75.3
Interest to gross cash farm income 9/	5.7	5.2	5.8	6.1	5.8	5.9
Asset turnover 10/	22.0	22.6	21.5	21.2	21.9	20.8
Debt burden ratio (net cash income plus interest/farm debt) 11/	47.5	49.3	42.8	49.3	46.0	42.4

P= preliminary. F = forecast.

1/ Assesses the ability of farm businesses to repay interest and principal associated with farm business debt from net cash farm income. Higher values indicate a better cash position.

2/ Indicates the proportion of gross cash farm income needed to service debt. Lower values indicate a relatively better cash position.

3/ Focuses on the ability to meet interest payments out of net farm income. A higher value of the times interest-earned ratio indicates that net farm income covers more interest expense and that operator equity is less exposed to risk.

4/ Indicates the relative dependence of farm businesses on debt and their ability to use additional credit without impairing their risk-bearing ability.

5/ Measures the relative proportion of funds provided by creditors (debt) and owners (equity).

6/ Measures the per dollar returns to equity capital employed in the farm business from current income.

7/ Measures the per dollar return to farm assets from current income.

8/ Gives the proportion of gross cash income absorbed by cash production expenses. The higher the value of the ratio, the less efficient the farm sector is considered to be.

9/ Gives the proportion of gross farm revenue absorbed by interest payments. Higher values indicate a relatively fixed expense structure and less flexibility in meeting expenses as they arise.

10/ Measures the gross cash farm income generated per dollar of farm assets. The higher the value of the ratio relative to similar sized operations, the more efficiently the farm business uses its assets.

11/ The debt burden ratio reflects the strain placed on farm earnings to meet farm debt repayment obligations.

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